# ENGINEERING NEWS-RECORD

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# Why Oliver offers two tractors for the same kind of work

Pictured above is the Oliver Super 55 wheel tractor. Below, the "OC-3" crawler. Both do the same kind of work. Both have mounted equipment that includes: front-end loaders, bulldozers, angling-blade and hydraulic 3-point hitch that takes scrapers, booms, forks, scoops, post diggers and many other tools.

Together these two tractors can produce far more than a single larger crawler or wheel tractor. Put a loader on one, bulldozer on the other and you have a team for any job. A 3-point hitch on each tractor makes equipment twice as useful, half as expensive—buy one tool, use it on either machine. This interchange even includes an all-hydraulic ⅜-yd. backhoe.

These tractors are compact and easy to handle. They get around fast, work in small quarters, take little fuel and can be used in *two* places at one time! And when half this team is a crawler, your work continues year around, in all weather.

If your work does not permit two tractors, then pick the one that fits best, saves the most. The "OC-3" is gasoline powered, the Super 55 offers gas or diesel power. If you want to see these tractors and drive them yourself, or learn about the many mounted tools they use, call or see your Oliver Industrial Distributor.

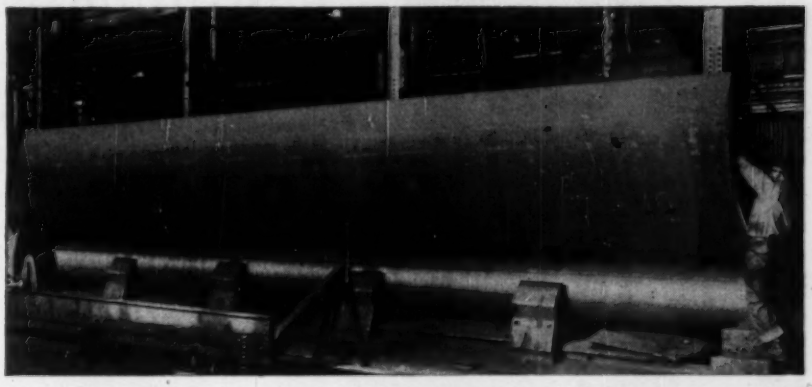
**THE OLIVER CORPORATION**
400 W. Madison Street, Chicago 6, Illinois

THE OLIVER CORPORATION

**A complete line of industrial wheel and crawler tractors**

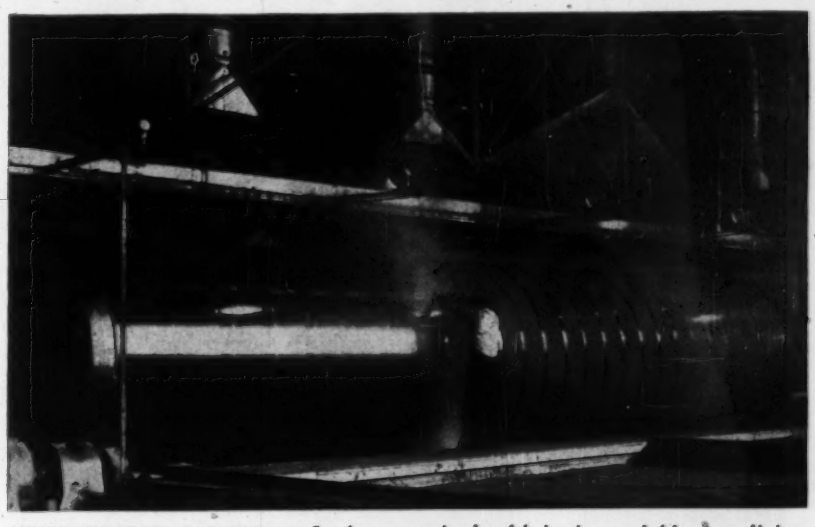
# 96-In. ID Pipe--From Shop to Site

**ACCURATE BEVELING** of the plate edges ensures tight longitudinal welds.



**POWERFUL 40-FT ROLLS** are shown here curving 9/16-in.-thick plates into one-third cylinders. After tack-welding the plates are ready for final welding.

**THE PIPE IS WELDED** from inside and out by the submerged-arc process.



**NEWLY ENLARGED FACILITIES** at Steelton permit the fabrication, grit-blasting, lining, coating and wrapping of unusually large-diameter pipe — up to 96 in. ID.

**COMPARE THE SIZE** of the pipe with the truck and driver. Each length is 40 ft.

**BEING INSTALLED** near Baltimore where it will serve as an industrial water main, this 23,800-ft line required 597 lengths totalling approx. 7,800 tons.

---

When planning your next water or sewage line, we suggest that you consider the many advantages of Bethlehem Tar-Enameled Steel Pipe. For further information, please contact the Bethlehem sales office nearest you.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

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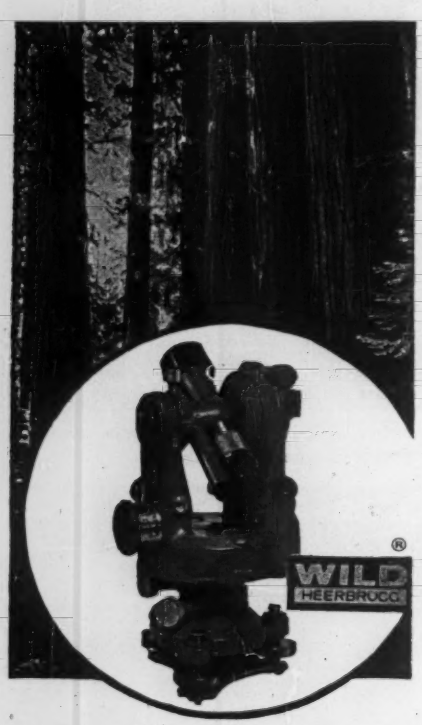
**BETHLEHEM STEEL**

BETHLEHEM STEEL

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Publisher

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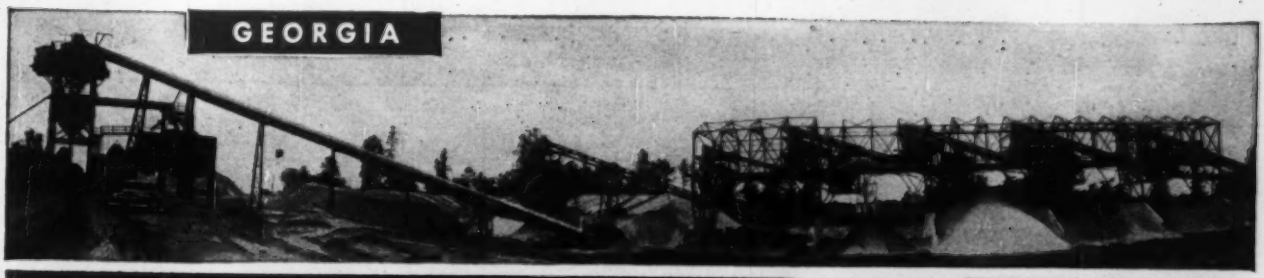
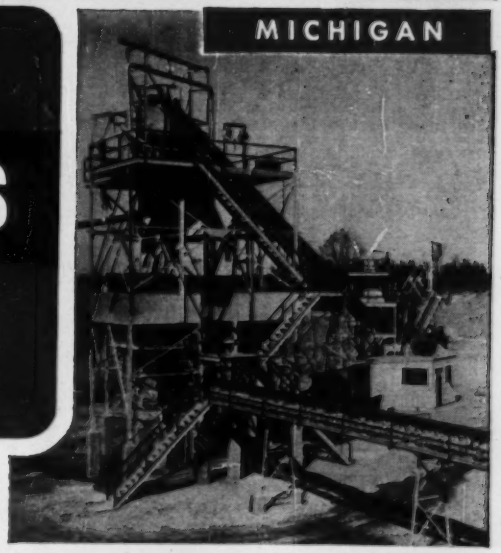
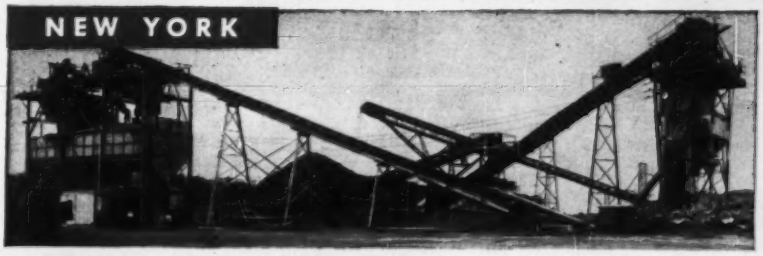



# modern AGGREGATE PLANTS by TELSMITH



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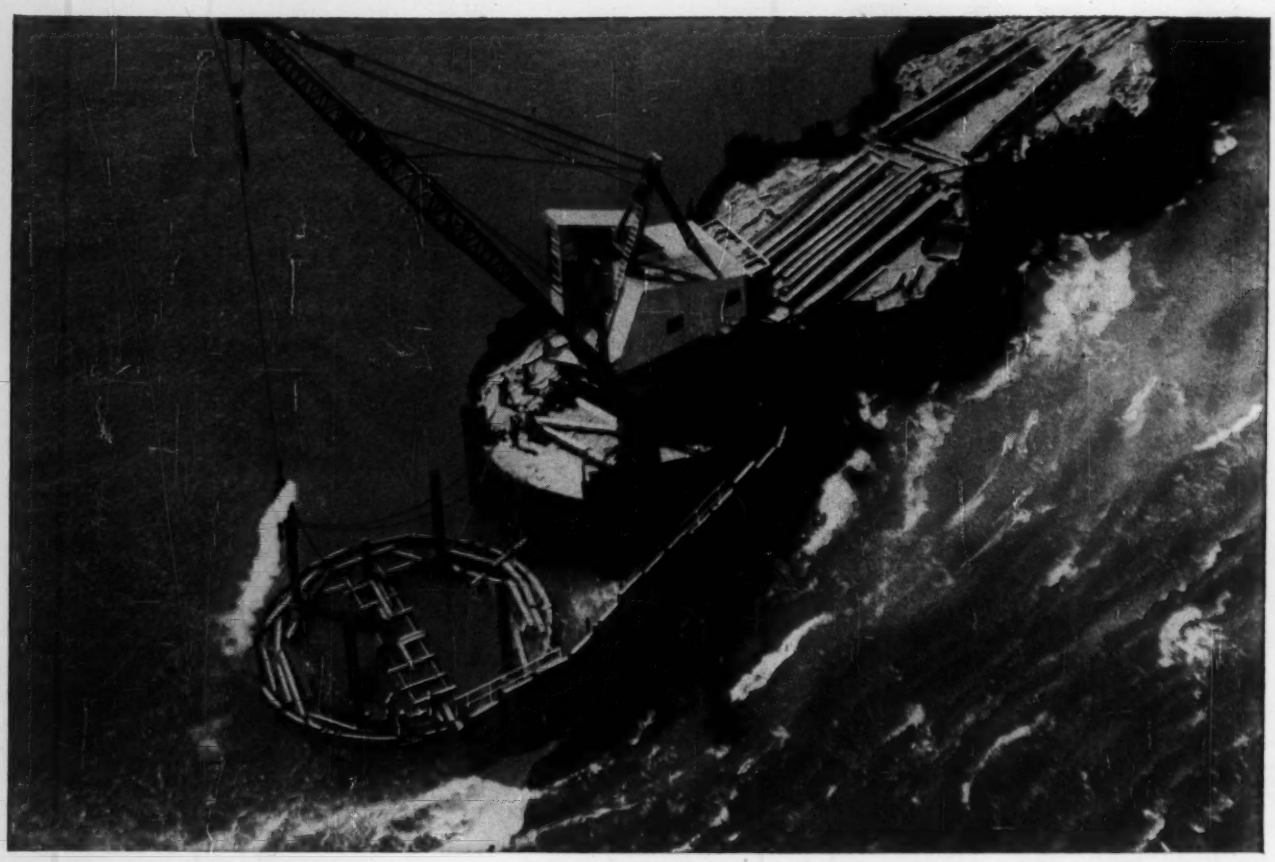


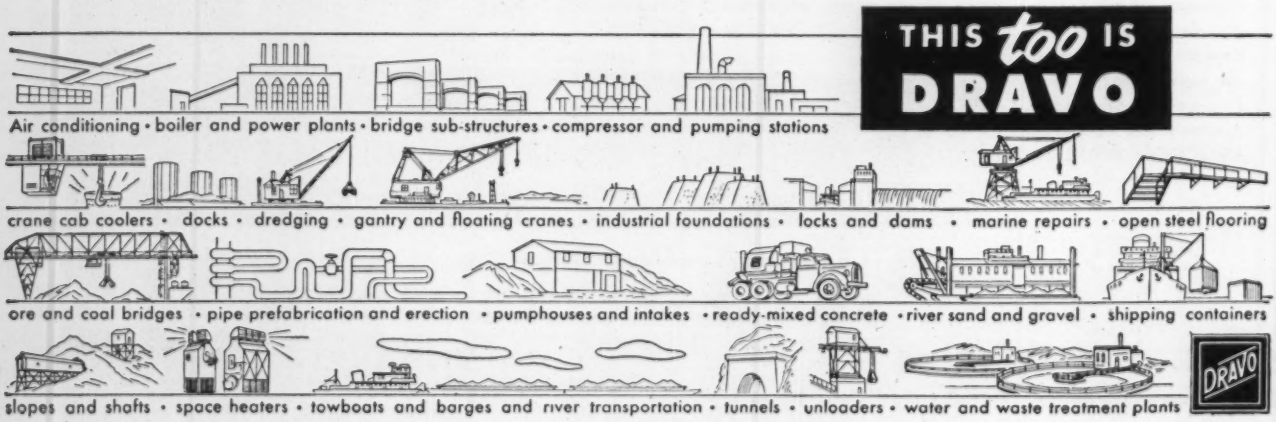
# TAMING ANGRY WATERS OF THE ST. LAWRENCE RIVER

A reservoir formed by the Great Lakes keeps the mighty St. Lawrence supplied with a steady high volume flow of water. The river has been raging past this site at the rate of 2¼-million gallons per second with a current speed of twelve miles per hour. In contrast, the Ohio River at flood stage only moves at a maximum of six or seven miles per hour.

Dravo Corporation workmen are constructing the first stage cofferdam on the St. Lawrence Power Project here at the foot of the Long Sault Rapids. This temporary structure is composed of a series of sand and gravel-filled cylinders or cells, the shells of which are formed of steel sheet piling. It blocks off a portion of the river, creating an area which can be pumped dry so that work can begin on Long Sault Dam.

A deflector of concrete and steel, sustaining 150 tons of continuous water pressure, diverts the rapids to permit setting the 47-foot diameter cells. In addition to swift water, Dravo also encountered the highest river flow in 80 years . . . an extremely rainy autumn . . . ice and below-zero temperatures . . . one of the heaviest blizzards on record.

This history-making project is typical of many such undertakings of a difficult or hazardous nature. For more than 60 years Dravo has been serving business and industry in many engineering fields, with customer satisfaction considered essential in every transaction. For more information write DRAVO CORPORATION, PITTSBURGH 25, PENNA.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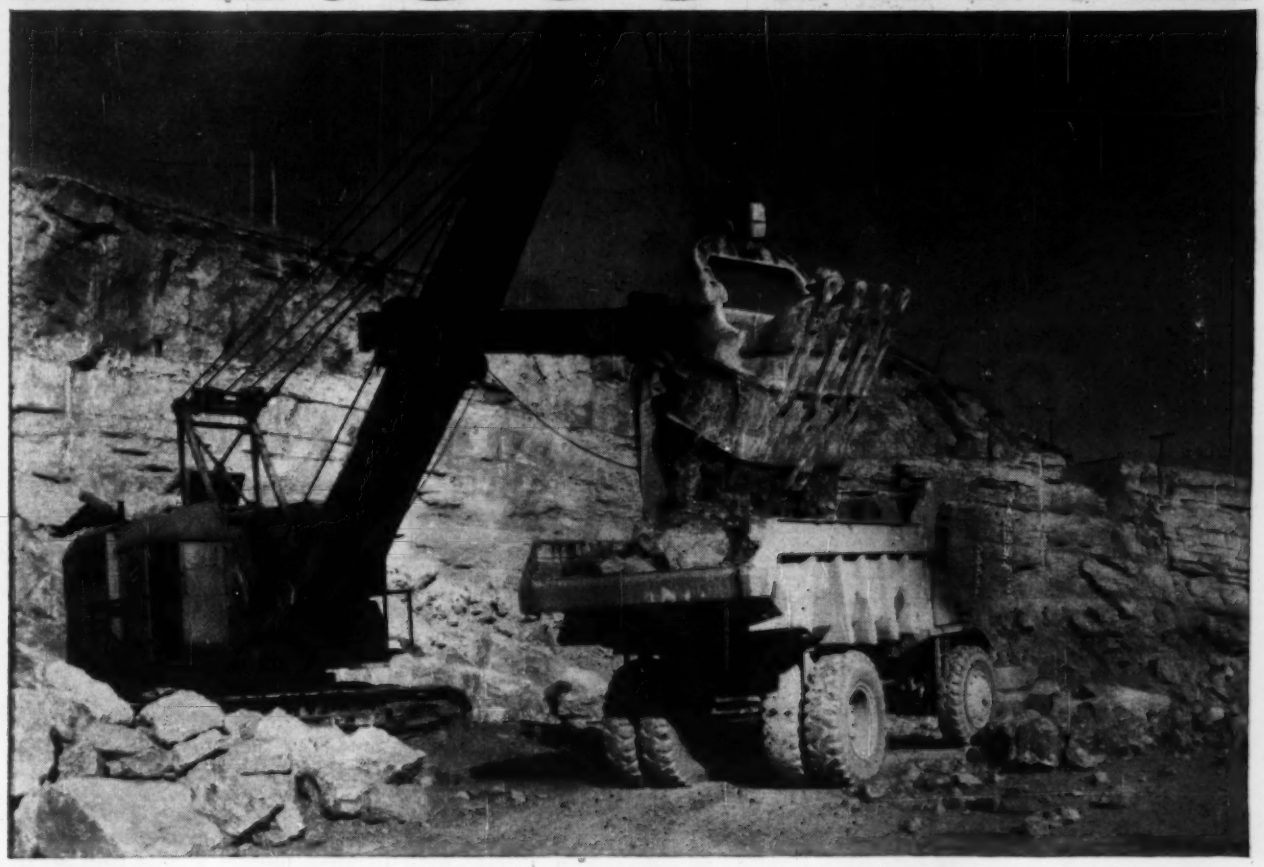


## All-Nylon tires roll 5,000 hours on original tread, user reports

SUPPLYING a host of materials to the construction industry—from concrete and brick to crushed stone and gravel—is the job of the Consumers Co., of McCook, Ill. Trucks without springs carry 15 tons of rock over the unsurfaced road from diggings to crusher. This means the tires must take all the shock.

B. F. Goodrich *all-nylon* tires do the job, Consumers Co. reports. They give up to 5,000 hours of service, and are 50% less susceptible to tire-killing, production-stopping blowouts.

**How nylon saves you money**

Nylon is stronger than ordinary cord materials, withstands double the impact and resists heat blowouts and flex breaks. That's why the B. F. Goodrich *all-nylon* tire body outwears even its extra-thick tread, can be recapped over and over! You get more original hours of service, more hours of service per recap.

Your B. F. Goodrich retailer has a complete line of *all-nylon* off-the-road tires. Find out from him how you can save money, no matter what kind of work you do. His address is listed under Tires in the Yellow Pages of your telephone book. Or write *The B. F. Goodrich Co., Tire & Equipment Division, Akron 18, Ohio.*

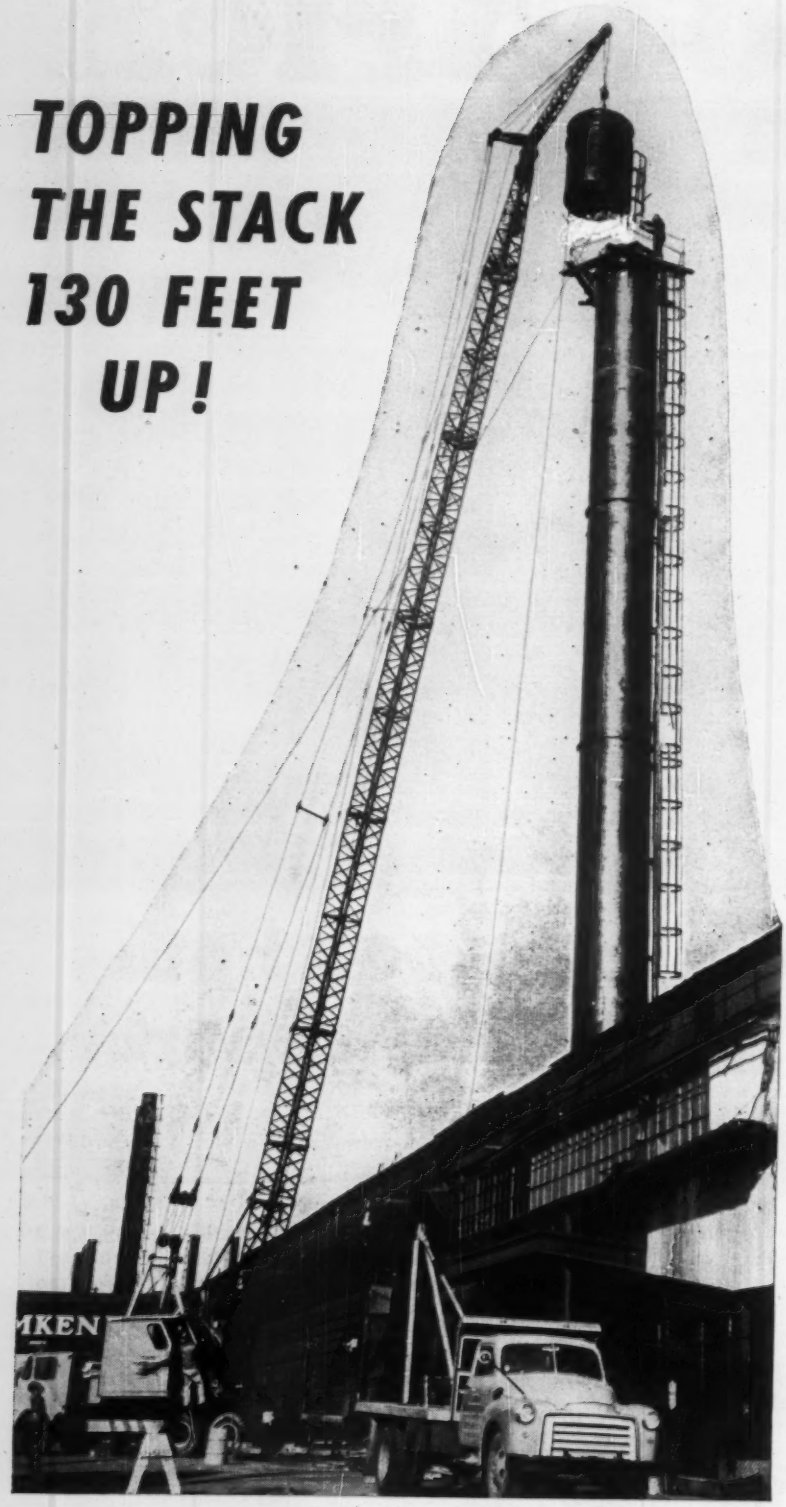
**ALL-NYLON** Rock Logger and Universal tires under 15-ton load on the way to the rock crusher.

**CONSUMERS** trucks travel up steep ¾-mile road from diggings. *All-nylon* tires resist bruising and sidewall scuffing.

**Specify B. F. Goodrich tires when ordering new equipment**

RESEARCH KEEPS B.F.Goodrich FIRST IN RUBBER

# TOPPING THE STACK 130 FEET UP!




**The Job:** Erecting 125-foot stack at The Timken Roller Bearing plant in Canton, Ohio.

**The Contractor:** The Towne Construction Co., 2502 Eighth Street, N.E., Canton, Ohio.

**The Equipment:** BAY CITY 20-ton capacity CraneMobile® with 140 feet of boom including jib.

In a very interesting letter which accompanied this photo, Mr. H. N. Helfen, President, Towne Construction Co., points out that "the CraneMobile has done more than it was supposed to. We raised and lowered the 140-foot boom without help". The top section of the stack weighs 2½ tons and is being carefully set in place by the sure control of the BAY CITY. There are a number of reasons why the CraneMobile out-performs — why we repeatedly say "All lifts are easier with a CraneMobile". Here are a few examples:

- Accurate, powerful, independent boom hoist
- Collapsible high gantry
- Power load lowering device
- Crane and carrier built as a unit
- Tandem, ball-bearing mounted drums

The CraneMobile is a powerful, efficient crane that combines rugged construction with flexible, mobile service and accurate load control. Why not get the full story by seeing your nearest BAY CITY dealer for details.

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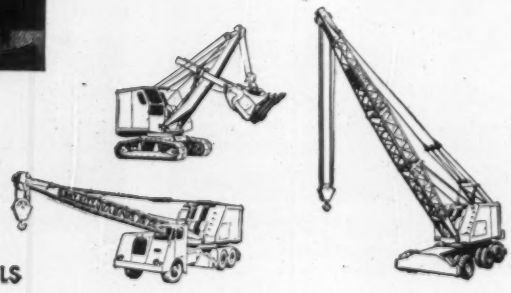
*Write for these catalogs describing* BAY CITY *Crawlers of ½ yard and up,* BAY CITY *CraneMobiles and CraneWagons in capacities to 25 tons.*



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**A delay on this particular job meant valuable time lost . . . dollars wasted . . . Ric-Wil, not only prides itself in offering the finest in prefabricated insulated piping, but takes pride in ON TIME DELIVERY . . . and speaking of delivery . . . the best way to meet piping construction schedules is to contact your Ric-Wil representative early in the planning stage. He will be glad to help on scheduling delivery . . . and "lend a hand" on technical information as well.**

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# Darex Diary

*by Henry L. Kennedy*
*Member, American Concrete Institute*
*Manager, Construction Products*
*Dewey & Almy Chemical Company*

***Things of interest that a visiting engineer saw in our laboratories**

WE HAD THE PLEASURE, not long ago, of touring one of the country's foremost engineers through our Dewey and Almy Concrete Research Laboratories; and he was so surprised by many of the things he saw there that I think you will be interested in reading about some of them here.

To start with, there are three reasons why Dewey and Almy maintains the most extensively equipped private laboratories in the cement and concrete industries: to search for new products and methods that can help you get better concrete; to analyze, for quality control, every lot of raw materials that comes into our plants; to test every batch of our finished products in a practical proving ground that is as close as possible to actual field conditions.

Our engineer friend, knowing this, wasn't surprised to see the cement grinding mills, mixers that simulate large field mixers, freezing and thawing equipment, electronic devices for measuring workability, unique apparatus for determining bond strength, etc. But he got pretty excited when we went into the area where we store more than 1500 sizable samples of cement gathered since 1932 from all over the United States. There are also specimens of aggregate, some from sections now covered by deep water, like at Boulder Dam.

In another room we watched for a while as some of our chemists studied a sizable sample of 2,000-year old concrete taken from the bay of Pozzolui, where it was used by Galius Caesar to build a wharf in 44 A.D. After seeing the test results, we agreed that, under the same conditions, most of our modern-quality concrete ought to stand up for at least 4,000 years.

Another thing he found interesting is the tremendous amount of research done by Dewey and Almy and how often it touches on construction problems in one way or another. Just the statistics are staggering: 160 Ph.Ds. and graduate chemists working in more than 60,000 square feet of air conditioned laboratories. No wonder we've been able to keep up the Cadillac-quality of DAREX AEA and our other construction products!

Frank Mardullier, Sam Burks, Mel Prior and I all spend a lot more time out in the field than we do at our desks in Cambridge. But some time when you're in this vicinity, come in and ask for us. We're always glad to talk about cement and concrete; and if we can possibly do it, we'd like to show you through our Dewey and Almy labs so you can see for yourself why we're so proud of them.

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and in Buenos Aires, Copenhagen, London, Melbourne, Milan, Montevideo, Montreal, Naples, Paris, São Paulo, Tokyo.

## READER COMMENT

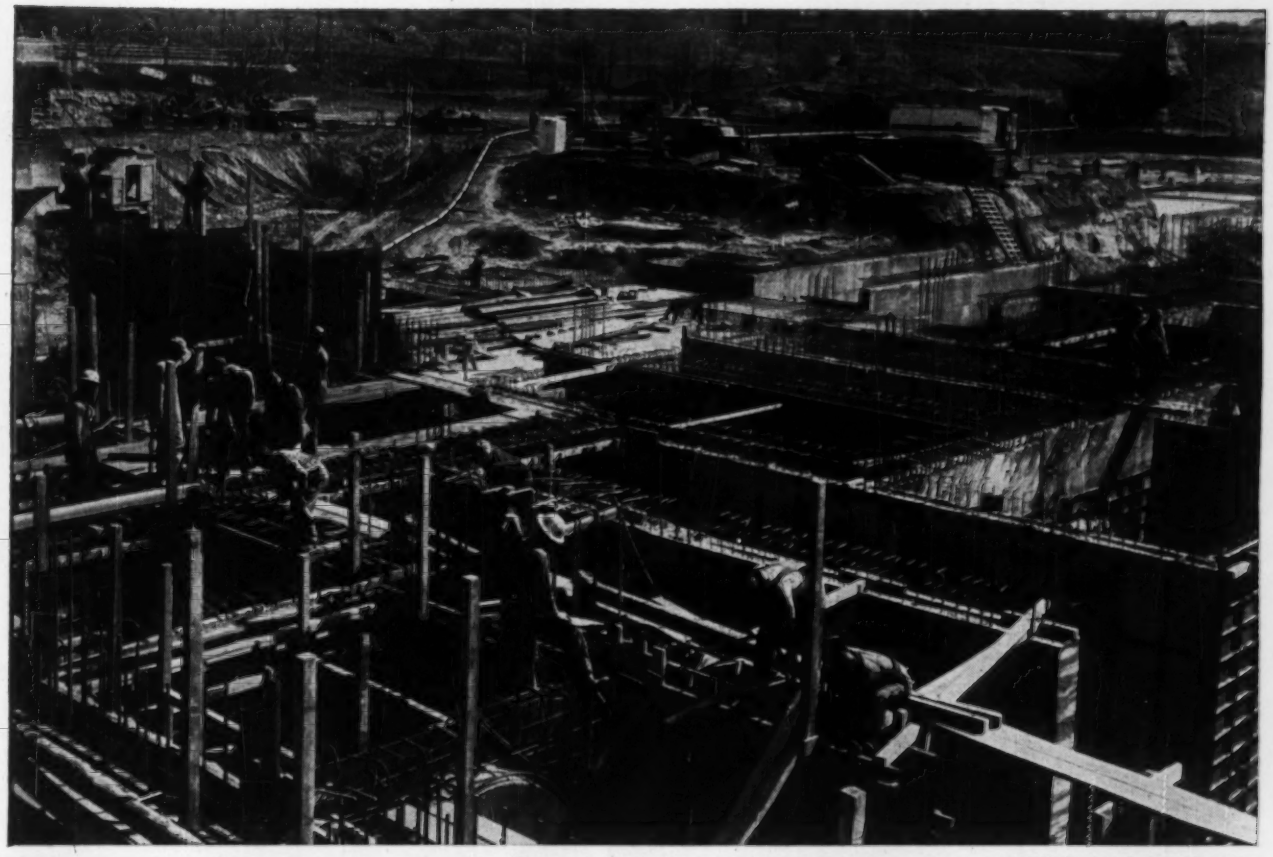
### No Community Planning

SIR: I have just concluded reading your "Staff Report on Schools" presented in the issue of your magazine of May 26, 1955. This of course is a subject of vital importance to all of us in this country, and the time and space that you have devoted to it represents a service on your part. I was amazed, however, to search through your various phases of discussion looking for the most vital element of all necessary to preserve our schools and communities and not finding it. Nowhere in the article is there a single constructive statement concerning the importance of sound comprehensive community plannnig—physical, economic and social.

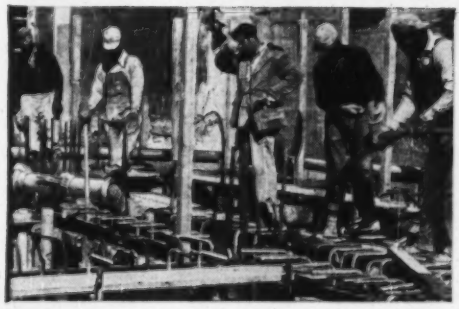
Great hopes were aroused when I saw "How to Save in the Planning Stage." I was sure that this would emphasize a modern program for coordinating physical growth—growth that determines future school needs. Instead, what did I find? Topics under such headings as "Cut Down on Floor Area," "Shorten the Perimeter" and "Go Easy on Equipment." All, unquestionably important as long as your perspective is that of only one site and the structure thereon. Again, I felt encouraged when I reached the part entitled "The Right Way to Go About Building a School." Surely, here we would find a broad and farsighted viewpoint. While some slight mention of general planning crept in, almost appearing as if inadvertently, again the impression was created for the average tax payer that the school problem is a matter completely isolated from all other facets of community life.

True, school building today is already behind the pace of community growth, but are we to continue making the same mistakes resulting from lack of proper development planning which we have made for years. Do not engineers, architects and educators admit that community structure determines the ultimate school problem and the ability to meet it? What good is the best fenestrated and oriented structure if it is in the wrong location, is inaccessible or dangerous from traffic, utilizes land much more suited for other economic uses and in general is out of harmony with the comprehensive community pattern?

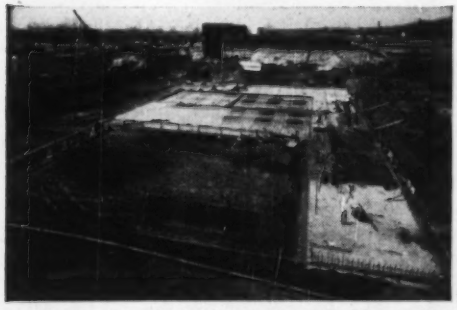
City planning and capital works programming are just as important if not more so to the school problem than is the short-range meeting of immediate needs by fancy buildings and glass



Pumpcrete, located at central mixing plant, pumps concrete 850 feet to forms. The slim pipeline can be laid wherever desired—never interferes with construction crews.



Here you see concrete pouring from the end of the pipeline directly into a wall form. Note foreman's walkie-talkie contact with Pumpcrete operator 850 feet away.



Pipeline is set in position for next section of foundation slab for filter house. Two pipelines were used, one for the filter house (foreground) and one for the pump house (background).

# Pumpcrete® pipes concrete 850 ft. to forms—speeds work, cuts costs on filter plant

Placing concrete for new filter and pump house additions to the Kansas City, Missouri, water works, was a natural for Rex Pumpcrete—the pump that delivers concrete by pipeline.

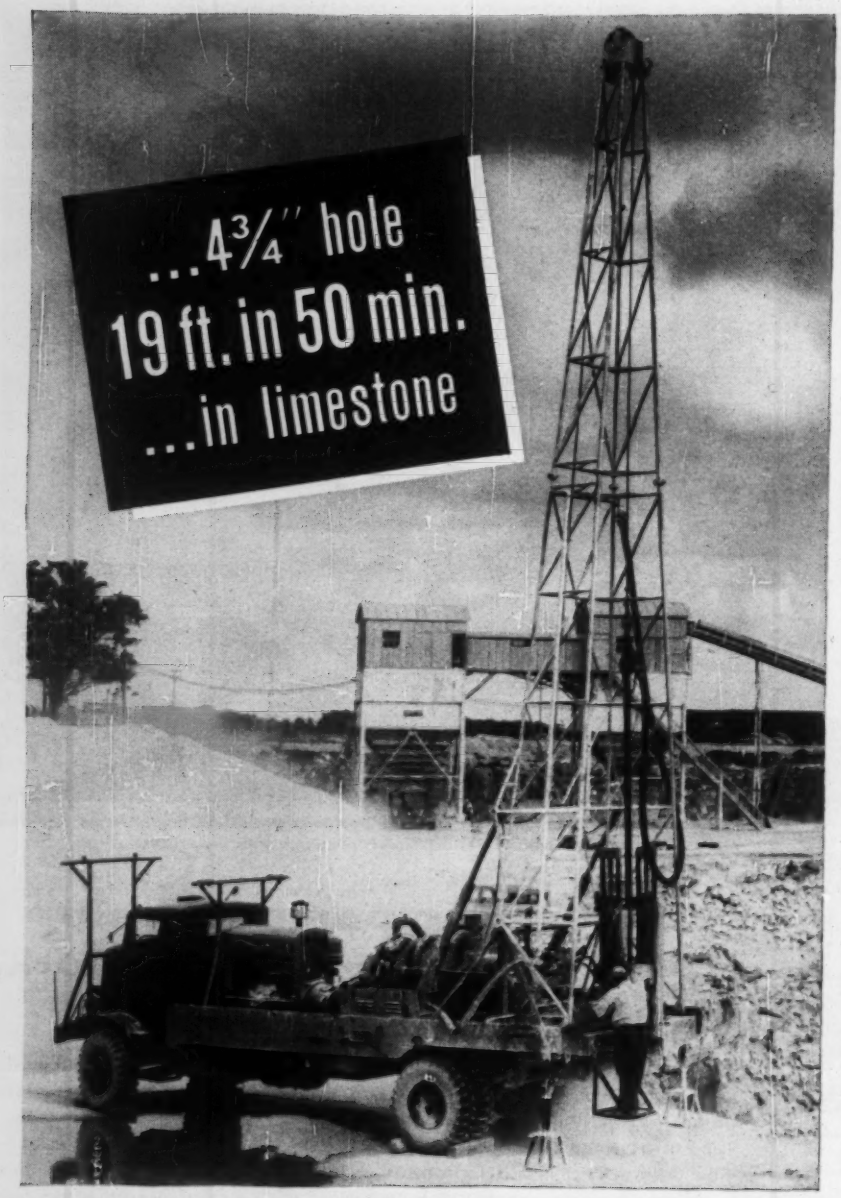
23,000 cubic yards of concrete for the two buildings will be placed by The Salvatore S. Patti Company, Kansas City, contractors. The new buildings cover an area 300 by 600 feet with a total height of 65 feet. So as not to interfere with construction crews, Pumpcrete was located conveniently next to the central mixing plant 850 feet from the work area.

By pumping concrete direct to the forms, it was possible to eliminate costly preparatory work and minimize the size of the placement crew. Contrast this with the elaborate and expensive system of buggies, lifts, runways, trucks needed for conventional placement methods.

The Salvatore S. Patti Company knows Pumpcrete well—enthusiastically reports savings in time, labor and materials on this and many placement jobs it has done in the past twenty years with this pipeline placement method. Why not investigate Pumpcrete for your work? See your local Rex Distributor, or write Chain Belt Company, 4633 W. Greenfield Ave., Milwaukee 1, Wis.

CONSTRUCTION REX MACHINERY

CHAIN BELT COMPANY




WAUKESHA Diesel

**Model 135-DKU — six cylinders, 4¼ x 5-in., 115 hp at 2000 rpm, max.**

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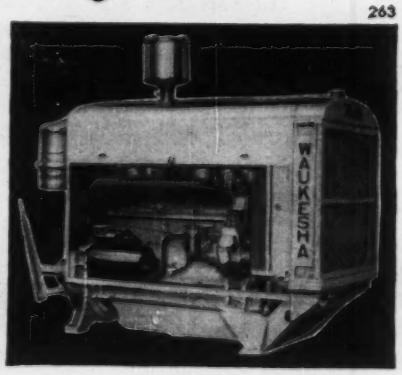


● Quality Limestone Products, Inc., Sussex, Wis., drill a 4¾-inch hole to 19 ft. in 50 minutes, in limestone, with their Waukesha Diesel powered Joy Model 225 rotary blast hole drill with hydraulic feed. This high performance Diesel is an overhead valve, dry sleeve cylinder unit, with patented spherical combustion chamber. Clean burning and smooth running in all speed ranges. *Send for Bulletin 1574.*

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## READER COMMENT

walls. Coordinated growth means a sound economic base that is kept in pace with financial ability. Planning for cities means better neighborhood organization, more pleasing and efficient arrangement and sensible public expenditures. All of this adds up to meeting the school problem easier but not by merely sticking a pin in the first site available and assuming that school facilities are needed without knowing how they fit into the entire community.

I know that as a magazine you did not intend to give this impression, and I certainly hope that your concept of good school planning goes beyond what you presented and includes the proper use of the term PLANNING.

HERBERT H. SMITH
*Planning Consultant*
*Community Planning Associates,*
*Princeton, N. J.*

### How to Spur Good Practice

SIR: The editorial, "Cooperating for Better Concrete," (ENR June 16, p. 152) prompts the suggestion that the standards of the Concrete Industry Board and similar organizations dedicated to the use of best methods be made a part of all contracts to which they can be made to apply. If such standards are in code form, they can be included in job specifications by reference. While that will not insure their being adopted by a contractor, failure to do so becomes a valid basis for action by the owner, and that may be all the "incentive" needed.

HERBERT E. SNYDER
*Cleveland, Ohio*

## CALENDAR

**Society of American Military Engineers,** Western Regional Convention, Olympic Hotel, Seattle, Wash., Aug. 18-20.

**Pennsylvania Sewage and Industrial Wastes Association,** annual conference, Pennsylvania State College, Aug. 22-24.

**American Society of Civil Engineers,** hydraulics division, University of California, Berkeley, Calif., Aug. 24-26.

**International Association for Hydraulic Research,** 6th Plenary meeting, Delft, Netherlands, Aug. 29-Sept. 2.

**New York Section, American Water Works Association,** annual fall meeting, Saranac Inn, Saranac Inn, N. Y., Sept. 8-9.

**Western Association of State Highway Officials,** annual conference, Jackson Lake Lodge, Wyo., Sept. 8-10.

**New England Water Works Association,** Lake Placid Club, Lake Placid, N. Y., Sept. 18-22.

**International Road Congress,** Dolmabahce and Yildiz Palaces, Istanbul, Turkey, Sept. 26-Oct. 16.

**Federation of Sewage and Industrial Wastes Associations,** Ambassador Hotel, Atlantic City, N. J., Oct. 10-13.

**Southwest Section, American Water Works Association,** San Antonio, Tex., Oct. 16-19.

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Whether you need wire rope for scrapers, draglines, shovels, or any other purpose—there is a MONARCH WHYTE STRAND rope that's *right* for your needs. WHYTE STRAND wire ropes are designed for the proper combination of flexibility, strength, and resistance to abrasion... the qualities you need to get better service at lower cost.

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## 1. System Design

**(Typical Economies)**

- Installation in shallower trenches
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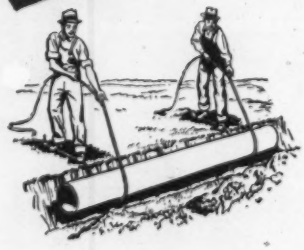
**Users have found**—With its high flow capacity (flow coefficient n= 0.010 derived from the Manning formula) and with its maintained strength, Transite Sewer Pipe contributes to typical system design economies.

## 2. Installation

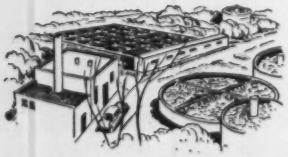


**(Typical Economies)**

- Fewer joints
- Easier handling
- Smaller crews
- Speedier assembly
- Assurance that joints pass severe infiltration tests

**Users have found**—With its longer lengths, light weight, ease of assembly and tight, quickly made joints, Transite Sewer Pipe contributes to typical installation economies.

## 3. Operation



**(Typical Economies)**

- Infiltration treatment cost drastically reduced
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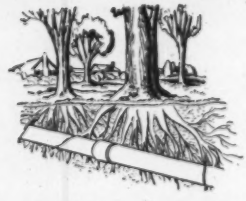
## 4. Maintenance



**(Typical Economies)**

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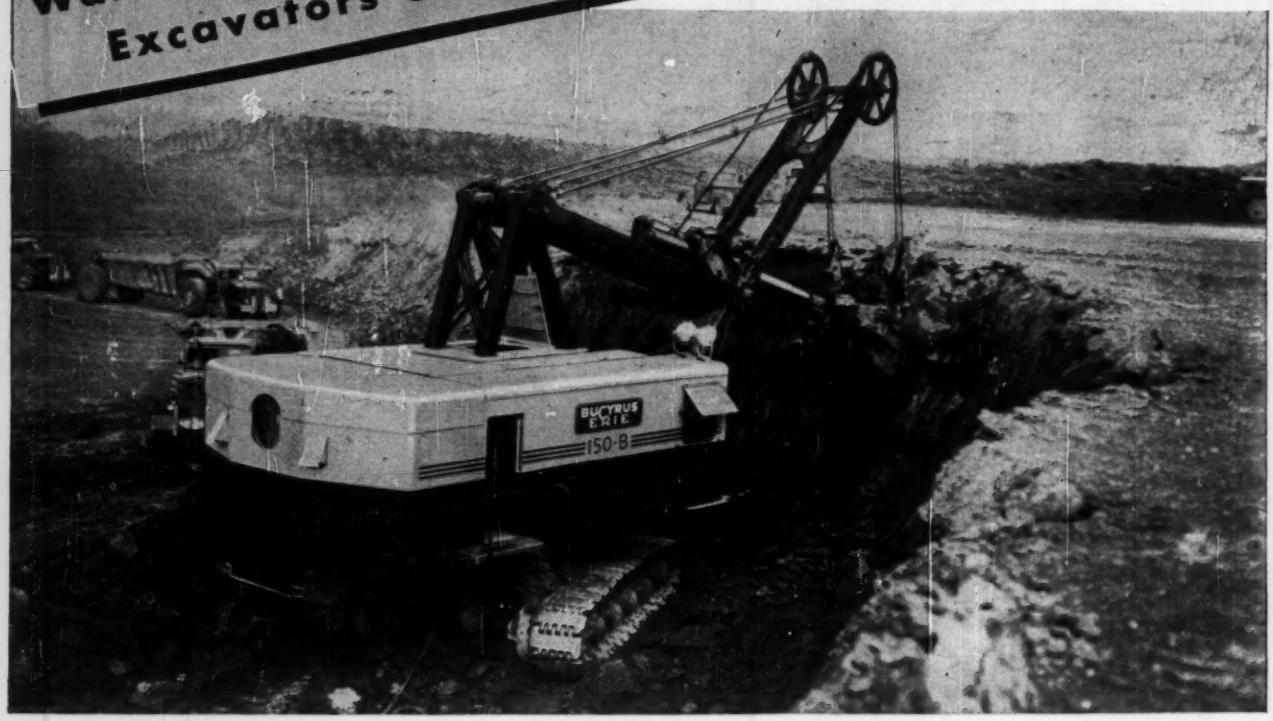
# LOW COST DIGGING FOR BIG YARDAGE JOBS




This Bucyrus-Erie 150-B was used in digging an approach channel to the downstream portion of the Fort Randall Dam spillway. Earlier, the electric shovel worked on the construction of haul roads and ramps leading to the excavating area.

**Large construction projects, like the multi-million yard Fort Randall Dam, profit greatly from the big-output capacity of Bucyrus-Erie Ward Leonard electric excavators. These machines help bring down the cost-per-ton of dirt moved to real profit-making levels.**

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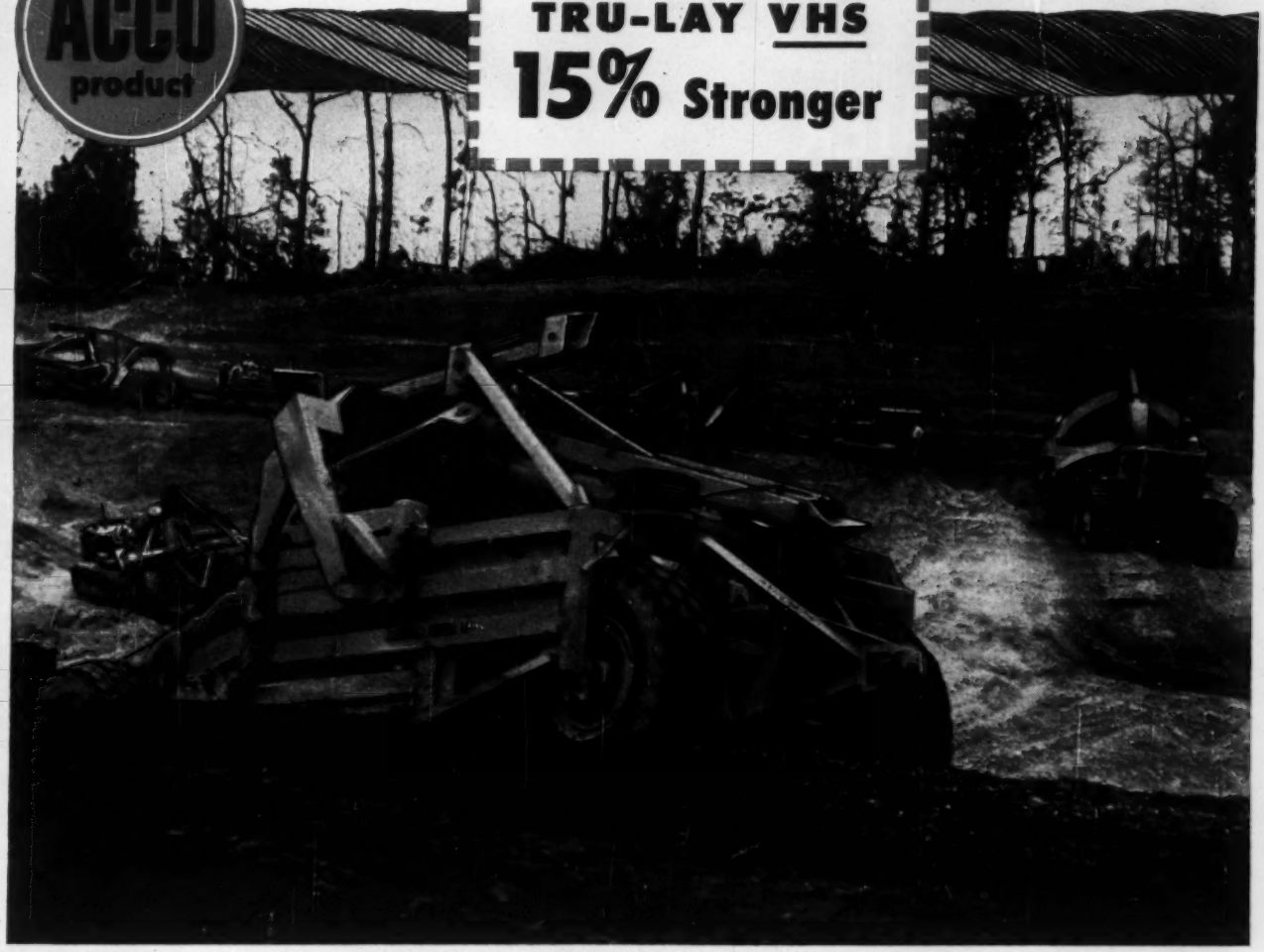

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Today, water is as basic to industrial development as it always has been to agriculture. Since thriving industry is essential to the growth and prosperity of the community, a water supply system capable of sustaining a high rate of industrial expansion is a prime concern of the community.

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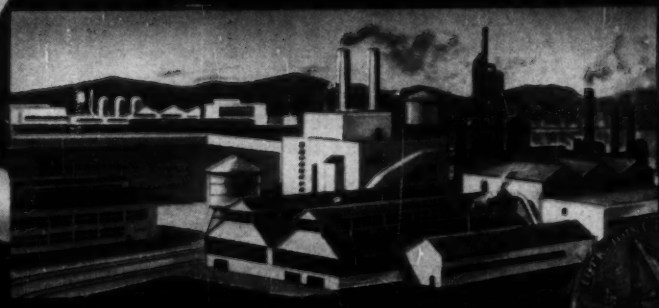

This pipe retains its initial high carrying capacity throughout an exceptionally long life, is low in initial cost, and requires very little, if any, maintenance. More important still, its record for unfailing, trouble-free service is unexcelled

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# ENGINEERING NEWS-RECORD

Vol. 155, No. 1 July 7, 1955

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# THE CONSTRUCTION WEEK

**APPEARANCE COUNTS**—The Wisconsin Supreme Court has upheld a community's right to deny a building permit on the grounds that the structure would not be architecturally in keeping with the rest of the neighborhood. The case turned on a zoning ordinance of Fox Point, Wis., where a firm was denied permission to build a two-story brick colonial house.

The American Society of Planning Officials, which has summarized the case in its monthly publication, "Zoning Digest," has hailed the decision as "a landmark in zoning law."

The Wisconsin decision cited the recent U.S. Supreme Court ruling that upheld a Washington, D. C. redevelopment law. That ruling declared: "It is within the power of the legislature to determine that a community should be beautiful as well as healthy . . ."

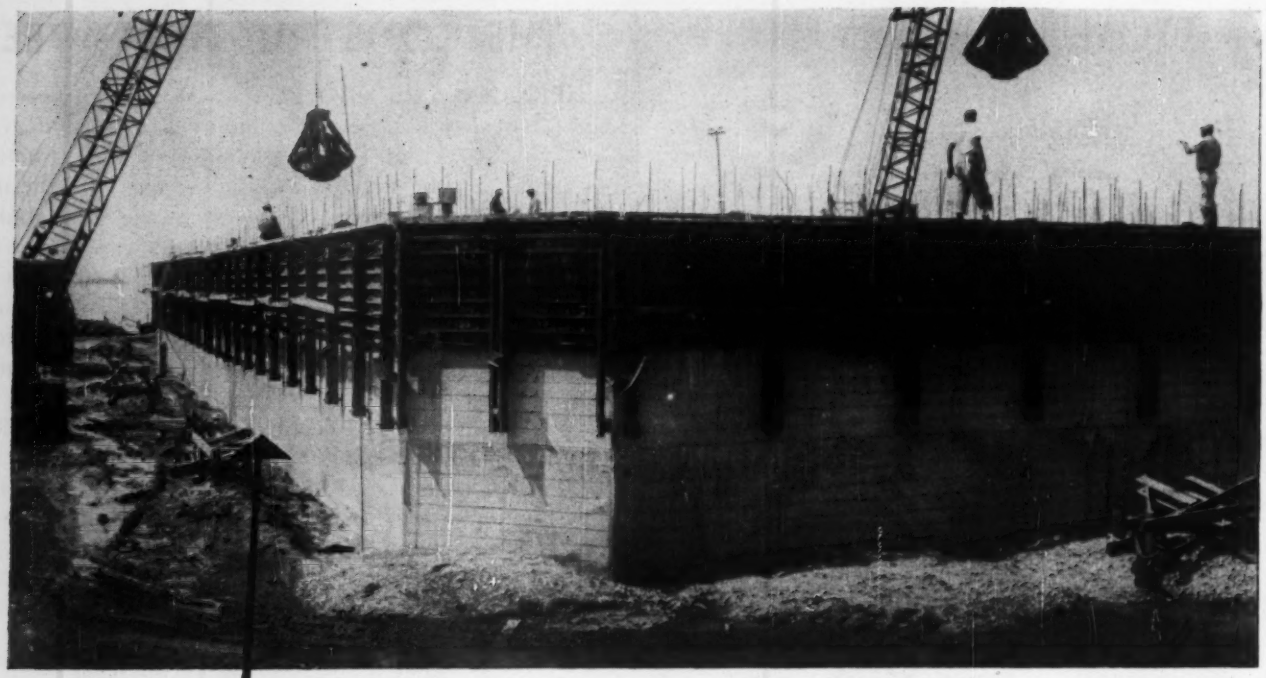
**CLAIRVOYANT?**—At a hearing of the Hoover Commission task force on water resources and power in New York last spring, Gwilym A. Price, president of Westinghouse, presented a brief for private development of remaining power at Niagara. Inevitably his remarks drew a sharp-tongued retort from New York's Robert Moses—in this case in his role as Chairman of the New York State Power Authority.

Among other things, Moses caustically admonished Price to "stick to his knitting," questioning what interest he could have in Niagara other than sale of equipment. And, for good measure, he happened to toss in the comment that if his agency got to build the Niagara project, it might even be getting its equipment abroad anyway.

By coincidence, the Power Authority last week awarded for the St. Lawrence project—not Niagara—a transformer contract to English Electric Export & Trading Co., low bidder, for $367,316. Another British firm was second among six bidders, lowest U. S. bid was $423,462. Westinghouse was in fifth place.

**NEW FORM OF LOBBYING**—Although the House OK'd funds for Tuttle Creek Dam, part of the controversial Kansas River Basin flood-control plan, farmers who oppose the project still hope action will be blocked in the Senate. One of them mowed this message into an alfalfa field in 50-ft letters:

*Wide World photo*



# HOW TO POUR A BIG PIER ECONOMICALLY

## Contractor Again Chooses "Atlas" Speed Forms

The new Delaware River Suspension Bridge, linking South Philadelphia with New Jersey, is supported by two big piers, one 85' deep, the other 105', and both 174' long by 64' wide — a sizable job of accurate concrete pouring.

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# WASHINGTON OBSERVER

**Big dam construction legislation is caught in a Republican-Democratic struggle.** Both parties are jockeying to get political advantage—and their maneuvers are a real threat to final action in this session of Congress on major programs backed by the Eisenhower Administration, and western states groups.

**Some skillful horse trading will be necessary to get things moving.** Groups backing the Upper Colorado storage project are stalling action in the House until the Senate makes some move on the Trinity River project in California. The same pulling and tugging is going on between forces pushing the Hell's Canyon high dam and the Fryingpan-Arkansas water project. Other major construction schemes are in a similar fix.

•

**Democrats are short one vote in getting Hell's Canyon out of committee.** Republicans on the committee are opposed—the Administration favors the Idaho Power Co. proposal for low dam development of the Snake River—And the GOP has the vote, so far, of Democrat Russell Long of Louisiana. So Democrats are saying to GOP senators that they won't move on Fryingpan until the break comes on Hell's Canyon. Republican Senator Millikan is the key man.

•

**Trinity River and Ventura irrigation and water projects** are on the bargaining table in the House Interior Committee. Chairman Clare Engle is holding up final committee approval of the $760-million Upper Colorado until the Senate promises to move on his two California projects.

**He has been promised** a Senate hearing on Trinity, July 14. In turn, he has promised to take up Hell's Canyon, and maybe will move on Upper Colorado—already approved unofficially without the Echo Park Dam—if the Senate comes through. A rush for adjournment, though, may delay both until next year.

•

**The fight over Niagara power development** probably will go into next year. Democrats demand the construction by the New York Power Authority. Republicans in general want to approve plans of five private utilities to do the job. The House last year passed a bill for private development, the Senate approved public development. The dispute is far from being settled.

•

**Financing airport construction** in the same way as federal-aid highways is getting backing. The Senate has voted to authorize airport projects, and thence find federal matching funds when the bills come due. The Senate legislation authorizes $252-million, to be matched 50-50. Secretary of Commerce Weeks still opposes the procedure, but the House Commerce Committee is going ahead with hearings.

•

**Congress has denied extra money to improve construction statistics.** Commerce Dept. wants approximately $1.3 million for getting better data on housing and commercial construction. Commerce estimates that its figures are probably as much as 10% off—one way or another. The Senate approved more than half of the $1 million, but the House balked, and the final legislation for Commerce Dept. appropriations has no money for the program.

•

**The Dixon-Yates controversy will simmer for a long time yet.** The Administration is pulling away from the project, bowing to stubborn plans of the City of Memphis to build its own steam plant in the area. The Dixon-Yates combine wants to go ahead with its $107-million West Memphis, Ark., plant, but there will be a lot of controversy before any final decision is made.

# BORDEN *first* IN FLOOR GRATING

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**Here on this page are a few of the many new uses for grating being pioneered every day. Each is an exacting job where only standards of quality equal to BORDEN'S will do.**

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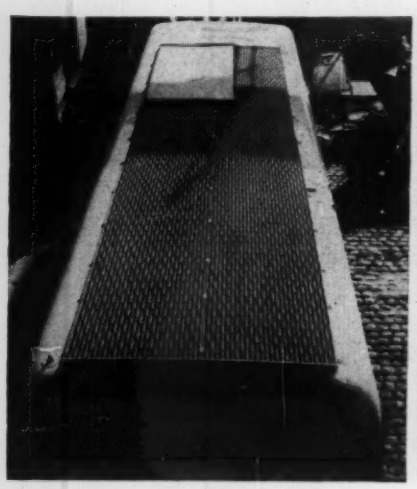

**Wherever this Color Television truck goes, whatever the assignment of the reporters who must mount its roof, BORDEN riveted *serra-crimp* grating will mean surerfooting —even in ice or snow.**

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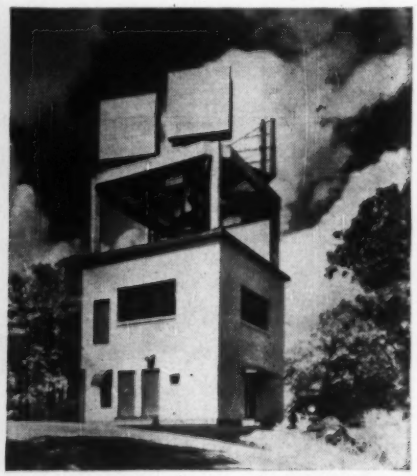

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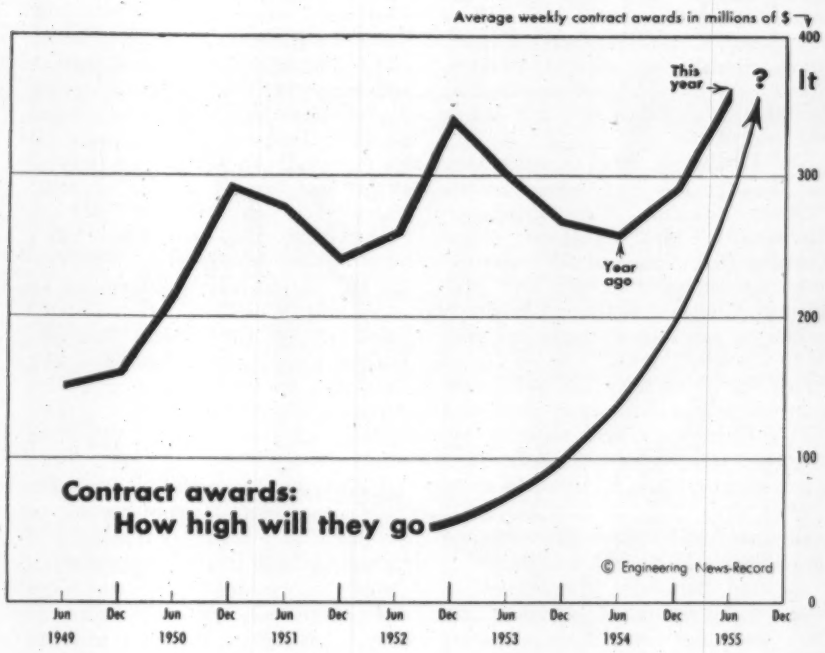



*First Half Was Tops and . . .*

# Next Six Months Look Fine

Contractors have just had the fastest six months of new business in history, signing up contracts on an average of $362 million each week. That's 39% above the 1954 rate—and fully 19% more than the previous high for a first half set in 1953.

Both quarters set new records. During the April-through-June period, awards averaged $388 million per week, 15% above the first quarter and 25% more than the former second-quarter record reached last year.

• **Prime mover**—Prime mover for this year's boom is private construction, which is up 52% above last year to a total of $9.5 billion. This is 29% higher than the old record in 1953. All major types of private work are contributing in large measure to the surge in contracts: housing; commercial building; and industrial work (charts at right).

Mass housing contracts have set a blistering pace so far this year. Awards are up 60% over the 1954 record, at a new high of $3.4 billion. Right along with this go commercial contracts, now 41% above last year's high and totaling nearly $900 million. Industrial work is doing much better than last year at this time—a gain of 31%. The showing has been particularly good in the second quarter, which has outpaced any three-month period since 1953.

• **Public works**—State and local contracts are 13% above last year for a total of $2.6 billion. This is 4% ahead of the old record in 1953. And the $900 million in federal contracts is the highest for this period since 1952.

Highway work is the star performer for public work this year. Awards total almost $1.1 billion, 26% ahead of last year and 20% ahead of the 1953 record first half.

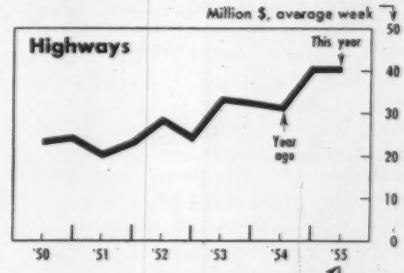
Waterworks and sewerage also are setting new highs. Waterworks is 11% ahead of last year, 1.5% ahead of the 1953 record. Sewerage awards are up 4% over 1954, 2% above the 1953 record.

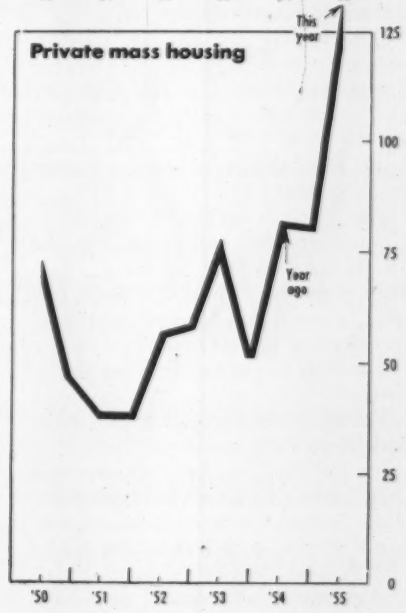
• **What's coming?**—To get a detailed picture of the outlook for the rest of this year, ENR asked its correspondents all across the U.S. to report on the general business atmosphere in their areas and on major jobs that may be up for contract this year.

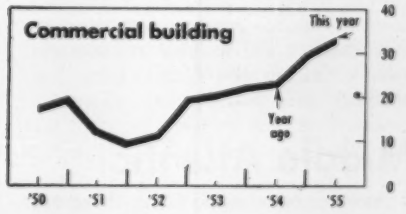
In general, the picture is one of growth and optimism all across the country, there are indications though, that volume of new housing projects may taper off in some areas.

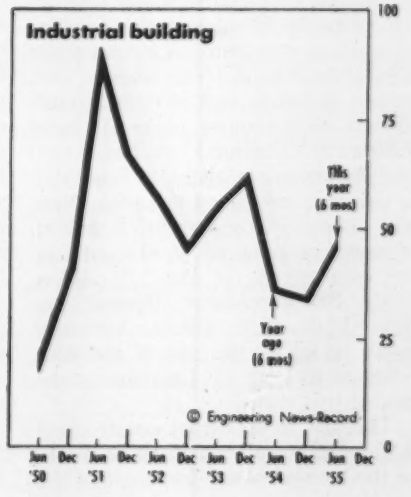
**Turn the page for a report on the construction highlights in each region.**

It depends mainly on . . .



## New England

Industrial centers and highway projects stand out among prospects for construction in the second half of 1955 in this area.

Some of these industrial centers are springing up near Route 128, the circumferential highway now being built around Boston. The development firm of Cabot, Cabot & Forbes has just completed two industrial centers near Boston, is starting one near Hartford, and is scouting for several other sites.

Route 128 has been completed from Newton around the north side of Boston to Gloucester, about 50 mi. In another two years it will be finished around the south side of Nantasket.

Construction is continuing on Boston's inner-belt highway, the elevated Central Highway. The city and state have a vast wheel of highways slated for the next two years, with radial spokes from the inner belt continuing out past Route 128.

The state is seeking a site for a $20-million office building that might get started this year. However, Boston's proposed $75-million Back Bay office center is still blocked by trouble over getting tax concessions.

The state hopes to let its remaining contracts this year on the east-west toll road from Boston to the New York line.

In Hartford, Conn., Underwood Corp. plans to start a $9-million plant as the first unit in what is expected to be a $50-million to $60-million industrial area at former Brainard Field. And downstate at Hamden, near New Haven, there are plans for a $12-million shopping center. Reports are that another $80 million in contracts will be let on the Connecticut Expressway this year.

## Middle Atlantic

Around New York City, there are big public works projects afoot. The city plans to award contracts on an $85-million water project at Cannonsville, N. Y., in November. The transit authority has $45 million of subway improvement projects which it hopes to let before long. The Board of Education has about $75 million in contracts scheduled this year. Nassau County plans about $9 million of sewerage projects. And contracts are coming up on the $10-million Oyster Bay Expressway. Upstate, the New York State Power Authority hopes to let all the rest of the contracts on its huge St. Lawrence power project this year.

The key to industrial construction in the Delaware Valley now seems to be the long-proposed deepening of the Delaware ship channel between Philadelphia and Trenton. Reports are that several hundred million dollars of industrial projects might get started after this job is done. Plans are going forward on Penn Center, Philadelphia's big central development. Work on a transportation building is expected to start before the end of the year.

In Pittsburgh, work worth many millions remains to be done on the Gateway Center. The "Pittsburgh Renaissance" idea is still spreading—creating heavy demand for alteration jobs on older buildings. The Allegheny County Sanitary Authority hopes to get started on an $87-million sewerage project. U. S. Steel Corp. has plans for a $75-million expansion at the Duquesne plant and $25 million for a new sintering operation near Butler. Armco Steel plans to spend over $25 million at its Butler plant. Jones & Laughlin Steel will spend $87 million this year and in 1956 on Pittsburgh facilities.

Around Baltimore, the keynote is housing developments, shopping centers, and highways. Four shopping centers totaling about $16 million are close to the construction stage. The State Roads Commission is letting about $50 million in contracts this year. A possibility: The $26-million "bomb-proof" headquarters for the Federal Old Age & Survivors Insurance Agency. The state plans to let bids in December on an $11-million office building in Baltimore.

## South

The story here is well summed up in the words of ENR's South Carolina correspondent:

"Consider the tiny town of Irmo, where once there were only the trees, the river, and a farmhouse or two. Now General Electric is building a $6-million plant along the shores of the Saluda River. It is rumored that South Carolina Electric & Gas Co. will erect a multi-million-dollar plant there. Irmo soon will make its acquaintance with industry. In other places the factories are smaller, but they are factories just the same. And small or large they bring a tremendous increase in construction—more houses, more schools, more businesses of every kind, and more and bigger roads, water systems, and related public works."

There aren't many big projects pending in the South now, outside of the large cities. But here and there all over the South new industry is generating construction—and it adds up to a lot.

In Virginia, the $57-million toll road between Richmond and St. Petersburg is expected to be financed this September. The Navy will spend $25 million in the area, mostly for a new hospital building at Portsmouth. The Army plans to spend $16 million for a Reserve Center at Roanoke and for buildings at Virginia airbases and forts. In West Virginia, several big contracts are still to be let on Kaiser Aluminum's big plant at Ravenswood. An $11-million hospital at Morgantown is in the planning stage.

In Atlanta, Ga., two 10-story office buildings are scheduled to start during the second half of 1955, and an exceptional number of industrial plants are on the boards. Southern Railway plans a new $15-million yard. And at Cleveland, Tenn., Bowaters Southern Paper Corp. plans a $25-million addition to its $50-million plant.

Florida's situation differs from the rest of the South, largely because of its appeal as a resort and because of its rapid growth in all-year population. Public works—highways, sewerage, water supply—is the big factor in heavy construction this year and will continue to be next year. Of course, new homes and shopping centers are going up rapidly. St. Regis Paper Co. is planning to double the capacity of its Jacksonville plant.

In Miami, the Dade County Port Authority is going to put up an $8-million terminal building at the airport. Further down, near the southern tip of the U. S., the $50-million construction and renovation of the Homestead Air Force Base will continue at full speed, with more than half the total already under contract.

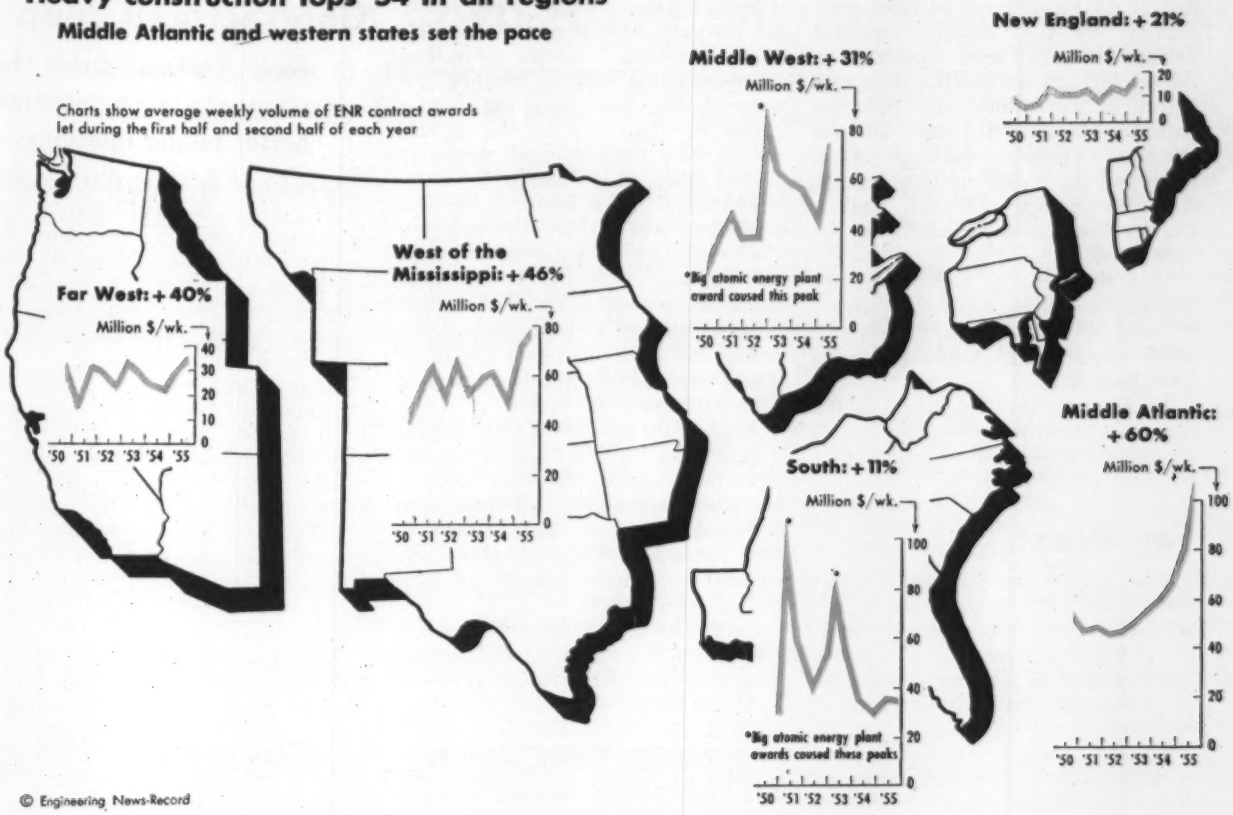
In New Orleans, bids on the superstructure of the new $65-million Mississippi River bridge will start being advertised about Aug. 1. About $6 million of work on buildings in the civic center is expected to start this year. Parts of a $20-million port improvement program are scheduled by the Dock Board this year. Anheuser-Busch plans a $23-million brewery near New Orleans, but the starting date is uncertain.

## Middle West

The big news in this area are the expansion plans of General Motors and Ford. GM's Fisher Body Division will build two 1¾-million sq ft stamping plants, one located at Mansfield, Ohio. The tank plant at Grand Blanc, Mich., will be converted into a stamping plant and floor space increased from 1.2 million sq ft to about 1.6 million sq ft. Other GM divisions will be making announcements. The total program is for $500 million to be spent by the end of next year, in-

**Heavy construction tops '54 in all regions**

**Middle Atlantic and western states set the pace**

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cluding 6.3 million sq ft of floor space. But most of the money will go for equipment.

Ford already has announced several contracts for new plants: at Lima, Ohio; Sterling Township, Mich.; Cincinnati; Cleveland; Sandusky, Ohio; and Livonia, Mich. A building and test tract should be started this summer near Romeo, Mich.

Around Detroit, the biggest thing next to automobiles is the $25-million Convention Hall and Exhibits Building—part of the civic center development—and an estimated $18-million state highway expansion program. J. L. Hudson of Detroit hopes to start construction this year on its second shopping center, the $25-million Eastland project. The John C. Lodge and Edsel Ford Expressways will mean another $9 million.

Around Chicago, where new industrial projects have outpaced other U. S. metropolitan areas in recent years, the boom is rolling, too. During the second half, Inland Steel will start a $35-million plant addition at the Indian Harbor Works. Cook County expects to sell bonds for its proposed $245-million expressway system. Homebuilding is running ahead of last year, especially in the suburbs. And Northwestern University has announced a long-range, $140-million building program. Total construction in the metropolitan area is estimated at $500 million for the second half, to set a record of $1 billion in 1955.

In Cleveland, a $9½-million contract will be let this month for the superstructure of the Inner Belt Bridge, part of the freeway system. The City Planning Commission last week approved location for $100 million worth of freeways. Cleveland is considering an $8-million lake front improvement program to get ready by 1958 or 1959 for the St. Lawrence Seaway.

In Columbus, things are booming. A $15-million Sears Roebuck building is expected to be up for letting this year, along with a $5-million office building. Don Casto & Son will start work soon on the $5-million Great Southern Shoppers Mart.

Around Cincinnati, about eight industrial districts are developing, with space for small manufacturers. In nearby Newport, Ky., an $8-million redevelopment program is planned. And all over the area, there is a lot of work going forward on highways, sewerage, and water systems.

In Indiana, the Pennsylvania R.R. is planning a 15-mi spur from its line north of Madison to an industrial site on the Ohio River near Bethlehem. It obviously expects a big plant development there.

In Milwaukee, hospital and school construction, plus a multi-million-dollar shopping center are among the projects keeping contractors busy. One AGC official here declares that "There is too much work for available men and materials."

## West of Mississippi

St. Louis people estimate that about $40 million worth of industrial plants, stores, and churches will start construction in the second half—mostly small jobs. The Atomic Energy Commission expects to award about $8 million in contracts this year at Weldon Spring, Mo., for a uranium refinery, nitric acid plant, and other facilities. Contracts on two big shopping centers are coming up.

At Omaha, Army Engineers plan to let about $9½ million in contracts this year at the Lincoln Air Force Base, plus $9 million on other nearby bases. They also will let 12 river contracts, estimated to total $12 million.

In Iowa, Aluminum Co. of America has announced a $20-million expansion of its plant near Davenport. No contracts have been let as yet. Procter & Gamble plans a $6-million plant near Iowa City. Ford has tentative plans for an $8½-million expansion of Wood Bros., Inc., its farm-machinery subsidiary in Des Moines.

In Texas, the boom keeps right on rolling. One of the main reasons is that the serious drought that has plagued the Southwest for the last

five or six years seems to have been broken. An AGC observer says that Dallas has seen more construction during the last six months than ever before in its history, and that the pattern is basically the same all over the state. However, shortages of cement and sheet rock are troublesome. And the competition for jobs is sharper than at any time since the depression.

Due this year in Dallas are bids on the $20-million, 40-story skyscraper planned by Southland Life, plus two other sizable office buildings and a $5-million hotel.

In Denver, the big news is the Air Force Academy. But two sizable shopping centers, and a 33-story office building are in prospect.

## Far West

Los Angeles is decidedly upset about the new emphasis on aircraft production dispersal expressed lately by Air Force Secretary Harold Talbott. There is talk of subcontracts not let, of building plans delayed, pending clarification.

However, there is plenty of building in other lines. Local companies are expanding, more eastern companies are moving in with branch plants. For instance, American Brass Co. plans a $13-million brass mill. Office buildings, shopping centers are in the works. Examples: a $7-million Furniture Mart, and a $15-million shopping center in nearby West Covina.

Public works will be strong, too. Freeway, flood control, and storm-drain projects will be coming. Los Angeles also has a heavy building program under way. Housing is expected to be down in the second half. There certainly won't be much doing in multiple dwellings, where vacancies are high.

Two boom areas of metropolitan LA will get a major share of construction—Orange County and the San Fernando Valley. Orange County, already a boom area for housing and new industry, is getting a noticeable boost from Walt Disney's fabulous Disneyland.

Around San Francisco, an AGC spokesman says he doesn't know of any contractor who isn't working, but that none are making over 5% profit, some are working on 3%, and others are working for no profit to keep crews busy and pay overhead.

There's plenty of industrial expansion around San Francisco. Du Pont plans to start a $10-million plant at Antioch to make tetraethyl lead and Freon. Kaiser Gypsum Co. will start a $5-million plant at Pittsburg. Both Permanente Cement and Ideal Cement plan sizable additions.

Several office buildings and stores are planned, including the Fireman's Fund Insurance Group's $4-million "western style" office building. A huge $25-million shopping center called Bay Fair will be started this fall at San Leandro and there are several others in the works.

Homebuilding is heavy in the San Francisco area. Utah Construction Co. will start dredging at Alameda this fall and eventually will fill tidelands for its projected $75-million development, to include about 4,500 homes and some apartment buildings. There are several other very sizable projects starting this year.

Most of the remaining $200 million available for highways in the current state budget should be contracted in the next six months. The state also will contract about $25 million in state buildings this year, plus loans of about $30 million more for local school construction.

In Washington State, a $20-million pulp plant is coming up at Cosmopolis, and a $6-million hangar at Moses Lake for Boeing Airplane Co.

### "Partnership Policy" Stressed At Three Dam Dedications

The Eisenhower "partnership policy" for hydroelectric development was strongly defended at three dam dedications in the Pacific Northwest late in June.

"Private capital should undertake that part of projects that will serve private ends," George H. Roderick, Assistant Secretary of the Army for Civil Affairs, said at the dedication of Lucky Peak Dam on the Boise River.

"We would favor this policy even if our available funds were more abundant," Roderick said. "But at this hour in our history, with so much of our public energy required in the fight for pure national survival, partnership seems more than ever the proper policy."

Speaking later at Albeni Falls Dam, on the Pend Oreille River in northern Idaho, and Lookout Point and Dexter Dams, on Oregon's Willamette River Basin project, Roderick spelled out an Administration rebuttal to critics of the partnership program.

Less money is available for river utilization because 85% of the federal budget is being spent for security, Roderick commented.

"By bringing in private resources, to augment those of the federal government, we can get on with the job that much faster and also avoid the unhealthy consequences of government competition with private industry," Roderick told crowds attending the dam dedication ceremonies.

## Contractors Group

### New Yorkers strive for stronger labor position, better public relations

Concerned by what they consider to be a threat to their economic and professional position, and need for more direct representation in labor matters, a number of New York State general contractors this week are working toward formation of an association of their own.

If successful, the new group will be somewhat unusual in that it will form a constituent of an existing statewide building employers' organization, rather than a completely independent association. The powerful, 2,500-member Building Industry Employers' Association of New York State will be the parent body, and has indicated that it will support the new organization.

Although the membership rolls of BIE include many general contractors, the great majority of the organization's members are specialty contractors and subcontractors, whose interests often do not coincide with those of the generals.

Keys to the need for a special general contractors' group are two, according to R. B. O'Connell, who is the chairman of a committee that has been given the responsibility of setting up the group:

- A real fear that a growing tendency for architects and owners to act as their own general contractor may seriously impair the generals' standing as professional managers of construction projects, and may end in causing higher construction costs to the public.
- The need for special representation in dealings with statewide labor organizations.

In a report to BIE's summer convention at Lake George, N. Y., the committee listed objectives of a general contractors' association as: public relations—an attempt to raise the business of general contracting to the level of a profession, and proper representation to the public as to the function of a general contractor; establishment of a code of ethics; representation—with special concern for their own peculiar problems—in labor negotiations; representation at the state level on legislation affecting the general contractor.

It was estimated that some 250 general contractors throughout the state might form the nucleus of the new organization, which will probably establish its headquarters in conjunction with BIE in the state capital at Albany.

# House Drafts Own Road Bill

**Measure provides for 12-year pay-as-you-go program with higher fuel and tire levies; has many Gore bill features**

Congress last week got its first look at the long-awaited House Democratic highway bill. The measure would accomplish the objectives of the Eisenhower program—but by pay-as-you-go tax increases instead of the corporation bond-borrowing method advocated by the President and the Clay Committee.

Completion of the $27-billion interstate system in 12 years, coupled with steadily increasing amounts for other federal-aid roads, is proposed in the new bill.

In a parliamentary maneuver to bypass some of the hurdles, Chairman George H. Fallon of the roads subcommittee introduced the bill in the House instead of submitting it first to his group for action and then to the full Public Works Committee for approval.

• **Higher Taxes**—Tax increases in the Fallon Bill would develop their biggest revenue returns from imposts on motor fuels—1 cent additional on gasoline for a new total of 3 cents a gallon and 4 cents more on diesel fuel to boost this tax to 6 cents. But the revenue proposals also would tax heavy trucks and buses heavily by raising the rates on big tires, tubes and retread rubber.

For wheels taking larger than 8¼ x 18 casings, the new taxes would be 50 cents a pound on tires; instead of the present 5 cents that everybody pays; 50 cents a pound on inner tubes, instead of 9 cents; and 20 cents a pound on recap or retread rubber (camelback), which is now untaxed.

All these taxes, under terms of the bill, would run two years longer than the accelerated construction program—for a total of 14 years. The construction speed-up would start July 1, 1957, and the taxes would revert to prewar levels (1¼ cents a gallon for gasoline and diesel fuel) on July 1, 1970, if the language of the bill were carried out.

Rough Treasury estimates indicate that the tax increases would bring in about $17 billion of additional revenue by 1970. During the same 14 years, the normal growth of revenues from present taxes on motor fuels and lubricating oil would yield about $8 billion over the current level of receipts, as a result of the steady increase in traffic. Taken together, the increased revenues would more than cover the additional federal outlay for the 12-year program.

• **No matching problem**—On an overall national basis, state matching of federal funds apparently would be no more of a problem than under the current Federal-Aid Highway Act. For the fiscal year that began July 1, the states have to put up about $800 million of their own money to match $875 million of federal-aid funds. The next year, if the Fallon program should go into effect, the state matching requirements would be about $825 million. As the program advanced, state matching might increase by 1965 to nearly $1.2 billion, but receipts to the states from their own motor fuel taxes—without any increase in rates—would at the same time also go up 38%.

President Eisenhower didn't see things that way last week, however. In his press conference on the day following introduction of the Fallon Bill, he opposed pay-as-you-go taxation for his highway program. His argument was that federal tax increases deprive the states of sources of revenue for matching funds and for highway improvements outside the federal-aid network.

Here's the federal funding program proposed in Fallon's bill for the 12-year accelerated schedule starting July 1, 1957: $24 billion for the interstate system on a 90% federal, 10% state matching basis, beginning with $1.2 billion for fiscal 1957 and rising to a peak of $2.5 billion in 1964 and 1965—then tapering off to another $1.2 billion in the final year, 1968. During the same years, federal aid for the primary, secondary and urban systems, would be matched 50-50 by the states, starting off at $725 million in 1957 and increasing $25 million every year to $1 billion in 1968.

Interstate funds would be apportioned to the states on the basis of their interstate system needs, in accordance with the recent Highway Needs Report of the Bureau of Public Roads. Other Federal aid would be allotted on the basis of present formulas.

• **No Toll Aid**—Like the amended Gore Bill that the Senate passed, Fallon's measure provides no reimbursement to the states for completed interstate improvements. The Commerce Secretary would be authorized to approve interstate connections with toll road sections incorporated into the system only on condition that the toll revenues be used to retire the bonds as quickly as possible and make the roads toll-free.

Again like the Senate bill, the House measure proposes size and weight limitations on trucks and buses (see story on page 30).

• **Includes Davis-Bacon**—Contractors and highway people generally don't like one provision in the Fallon Bill, imposing Davis-Bacon Act requirements in states receiving interstate funds. Roadbuilders would have to pay prevailing wages set for the locality by the Secretary of Labor, with time-and-a-half for overtime beyond 8 hours a day and 40 hours a week.

# $70-Million Pier Program Planned

The bi-state Port of New York Authority has announced plans for one of the largest marine terminal development programs ever launched in the New York-New Jersey harbor.

PNYA plans to spend more than $70 million during the next 10 years to rebuild two miles of Brooklyn waterfront facilities purchased last week from the New York Dock Co.

For $13,750,000, the Port Authority acquired 23 shedded piers, three open piers and two marginal wharves fronting on the 40-ft-deep Buttermilk and East River channels, and about 50 acres of upland area and warehouse space. The piers, which handle a fourth of the port's general cargo, range in age from 36 to 65 years.

The new Brooklyn facilities being planned will furnish about 2,000,000 sq ft of shedded pier area, about one-third more than at present. The 44 berths now available will be replaced by 26 berths with larger wharf, shedded and upland areas.

Highlight of the Port Authority program will be construction of 13 large, shedded piers. Most of these will be of the "finger" type, patterned after the new Pier C at Hoboken and its sister Pier A now under construction.

Tentative design calls for construction of piers more than 300 ft wide and from 500 to 700 ft long, depending upon location of the pierhead line. Each berth will have from 60,000 to 90,000 sq ft of shedded area.

Over the past decade, the Port Authority has invested almost $40 million in marine terminal improvements. This includes new construction and rehabilitation at the Port Authority Grain Terminal and Columbia Street Pier on the Gowanus Canal in Brooklyn, Port Newark and the Hoboken-Port Authority piers in New Jersey.

## *ASTM Chalks Up . . .*

# Progress in Specifications

Development of needed specifications for engineering materials and methods of testing received a big boost last week in Atlantic City, N. J., when the American Socity for Testing Materials held one of the largest annual meetings in its history. Nearly 600 committees met and more than 30 technical sessions were held.

Included were symposiums on soils, impact testing, effect of speed on testing, corrosion, fatigue and significance of tests of concrete.

Claire H. Fellows, director of the Engineering Laboratory and Research Department, Detroit Edison Co., was elected president; and R. T. Kropf, director of research, Belding Heminway Co., New York, vice president.

• **New fields**—Under the pressure of new developments, the society expanded its activities by appointing new committees. By far the largest number of new groups formed were for the development of testing methods and specifications for plastics. Among others of interest to the construction industry was the formation by Committee C-16 on Thermal Insulating Materials of a new subcommittee with the designation S-XI on Reflective Insulation.

• **New specifications**—Many new specifications also received approval, subject to letter ballot. Included are new tentative specifications for crushed stone, crushed slag, and gravel for single, double or multiple bituminous surface treatments, and a tentative recommended practice for quantities of materials for bituminous surface treatments, advanced by Committee D-4 on Road and Paving Materials.

Committee C-17 on Asbestos-Cement Products proposed tentative specifications and methods of test for flat sheets, corrugated sheets, roofing shingles, siding shingles, clapboards and pressure pipe of asbestos-cement.

Committee C-13 on Concrete Pipe recommended tentative specifications for reinforced concrete low-head pressure pipe and low-head internal pressure sewer pipe.

Committee C-1 on Cement developed a tentative specification for slag cement. It also revised Standard Specifications for Portland Cement (C150-53). The revision deletes current limitations on calcium sulfate in hydrated mortar and adds current Federal Specification limits on sulfur trioxide. It changes compressive strength requirements and drops tensile strength requirements. Similar changes were made in Standard Specifications for Air-Entraining Portland Cement (C175-53).

A subcommittee of Committee C-9 on Concrete reported progress on a specification for natural pozzolans for use as an admixture.

The subcommittee on reinforcing bars, concerned over unanticipated extrapolation of its new Specification A305 for deformed bars, proposed a revision. According to reports received by the group, some government agencies were mistakenly trying to apply that specification to bars as large as No. 16 and 18 (2 in. or more in diameter). The revision of A305 will restrict its application to bars no larger than the present maximum of No. 11, since there are insufficient test data available for larger sizes.

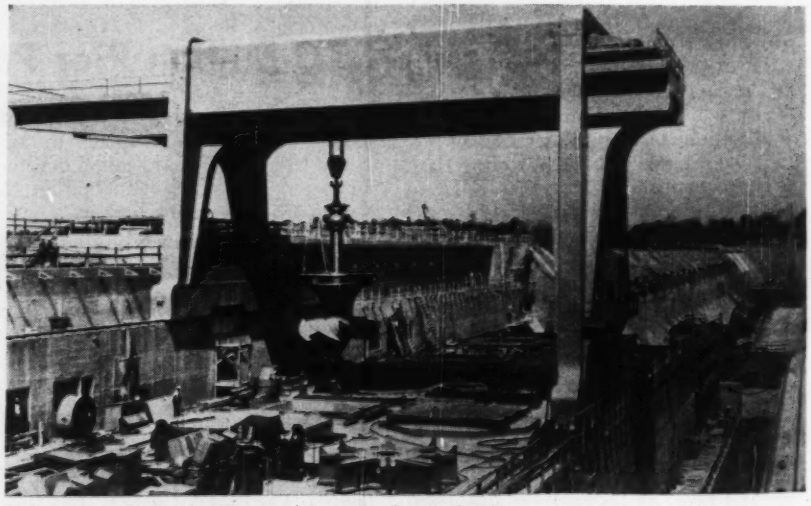
• **Changed materials**—The Atomic Age also is having an effect on ASTM, which could readily be discerned from some of the papers presented.

For example, J. C. Wilson and R. G. Berggren, of Oak Ridge National Laboratory, discussed the effects of neutron irradiation in steel. They said that there appears to be strong evidence that irradiation can cause structural metals to behave in an unusual manner. As a result, a new concept of the relationships between mechanical test results and service performance must be formulated in evaluating metals for service in nuclear reactors. Neutron bombardment can introduce changes that cannot be duplicated by alloying, heat treatment or deformation, they claimed.

H. W. Huntley and S. Untermeyer, General Electric Co., Schenectady, N. Y., reported that water of high purity is needed for use in reactors, or else radioactivity of the impurities will be a problem in equipment design, handling and maintenance.

• **New thinking on load tests**—D. B. Dorey and W. R. Schriever, Division of Building Research, National Research Council, Ottawa, Canada, called the attention of ASTM to shortcomings of existing specifications in building codes for loading tests. For one thing, the codes disagree on test requirements. For another, many of the requirements are vague or fail to allow for many important factors. The authors proposed that loading tests be divided into three main types: an acceptance test, a rating test and a research test.

The acceptance test would be carried out to assist building officials in evaluating a completed structure suspected of being faulty, a structure incapable of mathematical analysis or one to be used for a different type of occupancy than originally contemplated. The rating test would be used to assign allowable loads to new materials and new types of construction. The research test would be a scientific investigation of the performance of a structure up to and including collapse, to obtain design information.



**Roanoke Rapids Dam Nears Completion**

**Huge gantry crane moves key equipment into position as $34-million power station and dam near Roanoke Rapids, N. C., nears completion for Virginia Electric and Power Co. The gantry, installed by the general contractors, Stone & Webster Engineering Corp., is shown lifting Unit No. 4 generator shaft, thrust bearing and lower bearing bracket, weighing 84 tons. Crane has two main hooks, each rated at 80 tons plus 25% overload, providing for a 200-ton load.**

# State Legislative Sessions

- **Connecticut hikes gas tax and tolls**
- **Nebraska overhauls highway laws**
- **North Carolina tackles its water problem**

Both Nebraska and Connecticut state legislatures made major highway policy changes before closing shop for 1955. And, North Carolina legislators took two steps toward meeting the state's urgent need for water conservation laws and projects.

**Here are the highlights of the three sessions:**

## ● North Carolina

The North Carolina legislature tackled the state's water conservation problem by two actions. One was to create a state Board of Water Commissioners. The other was an act authorizing any two or more local governmental units to form authorities to build and operate water and sewer systems.

The latter measure was sponsored by several Piedmont cities and counties, which have been seeking a means of teaming up to provide standby water supplies for use in times of drought.

A record budget provides for highway expenditures of $213.4 million for the biennium. That compares with $200.2 million for the biennium just ended.

Contractors had less reason to be happy about two other developments. The legislature placed building materials under the state's 3% sales tax. Also, it failed to act on a proposed major bond issue to start the state on a primary road modernization and reconstruction program. The bond issue was advanced by the Highway Commission but vigorously opposed by Gov. Luther H. Hodges.

## ● Connecticut

Called back for a three-day special session to straighten out legislation that got snarled up in the rush to adjourn the regular session (ENR June 23, p. 26), Connecticut's legislature quickly approved a two-cent increase in the state gasoline tax (to six cents a gallon) and authorized the highway commissioner to raise tolls on state parkways and bridges to take effect as of July 1.

Gov. Abraham Ribicoff announced that before July 15, tolls will be increased from 10 to 20 cents on the Merritt Parkway and from 10 to 15 cents on the Wilbur Cross Parkway. No raises are planned in commuter tolls at this time, but new rates are being studied for the state's three toll bridges: Charter Oak Bridge at Hartford, Raymond E. Baldwin Bridge at Old Saybrook and Gold Star Memorial Bridge at New London.

The increase in parkway toll rates is expected to give the state an additional $1.5 million in revenue each year. The money will be credited to the state highway fund.

The legislature also increased state grants to towns and cities for roads from the present $5 million a year to $8 million.

The legislature established a seven-member State Highway Financing Study Commission and appropriated $3,000 for its work.

In other legislation, local zoning commissions will be required to hold hearings within 90 days after receiving applications, and to hand down decisions within 60 days after the hearing.

Another measure authorizes any town, city or borough to enter into flood control agreements with the federal government.

## ● Nebraska

Highways held the spotlight in Nebraska as the state's unicameral legislature wound up a record-breaking 114-day session.

All state highway laws were overhauled. One important change provides that names of persons taking out bidding forms can't be released prior to bidding. This upset the practice followed by the Department of Roads and Irrigation.

Over strong opposition from the Associated General Contractors, the legislature raised from $500 to $2,000 the amount which a county board can purchase without bids for road or bridge maintenance. (A $3,000 ceiling was proposed originally.)

The legislature refused to abolish the State Highway Commission, an advisory group created in 1953. But, it spelled out a little more clearly what the commission's role will be. The group can hold hearings, make studies and submit advice to the Department of Roads and Irrigation and to the governor.

The State Highway Department will have the authority to make relocations, regulate access control and other highway decisions, but with the written advice of the advisory commission and the consent of the governor. This had been a major source of friction.

Nebraska's 1953 State Turnpike Act was repealed. There is now no statutory authority for building a toll road in the state. The Turnpike Authority not only asked to be continued but also wanted $150,000 to finance a North Platte-Omaha feasibility study.

A bill to increase the gas tax one cent was turned down, but the legislature voted to extend the six-cent tax to 1959. It had been scheduled to drop down to five cents a gallon. The six-cent tax assures a continued highway program of $17 million or $18 million, with federal aid.

License fees for commercial trucks and passenger cars were increased an average of 15%, giving the state about $1.2 million a year more in vehicle license fees. But the legislature turned down a Highway Department request that the extra money be earmarked for interstate highway construction. A ton-mile tax on commercial trucks and buses was also proposed and rejected.

And, the legislature cleared the way for a pay increase for State Engineer L. N. Ress. The $8,500 ceiling was removed and Gov. Victor Anderson has already raised his salary to $12,000.

## Michigan Ready to Launch $1.2-Billion Road Program

Michigan will award the first contracts on a $1.2-billion highway building program next month. The program, involving some 1,200 mi of road work, is scheduled to be completed within the next 10 years.

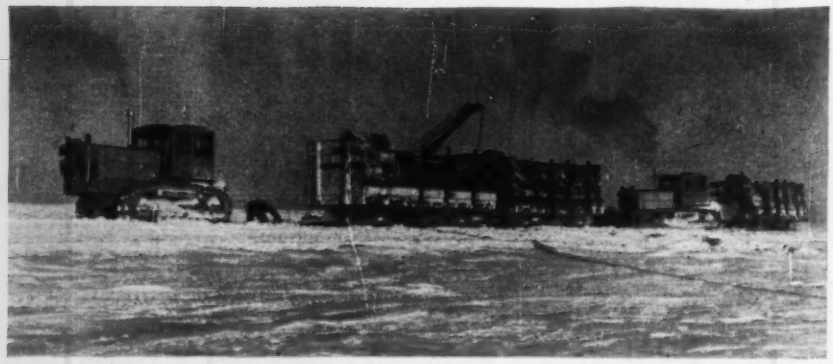
About half of the money will be used to improve present major trunk lines. The rest will be spent to complete the trunkline system in urban areas. A June gasoline tax increase of 1½ cents a gallon and a 10% boost in truck weight rates will finance the improvements.

The four-point program calls for a $77-million primary target of 235 mi of 4-lane divided highway. The second priority list includes 305 mi at a cost of $124 million. Third in importance will be $126 million worth of improvements on 280 mi. The final list has 400 mi to be improved at a cost of $175 million.

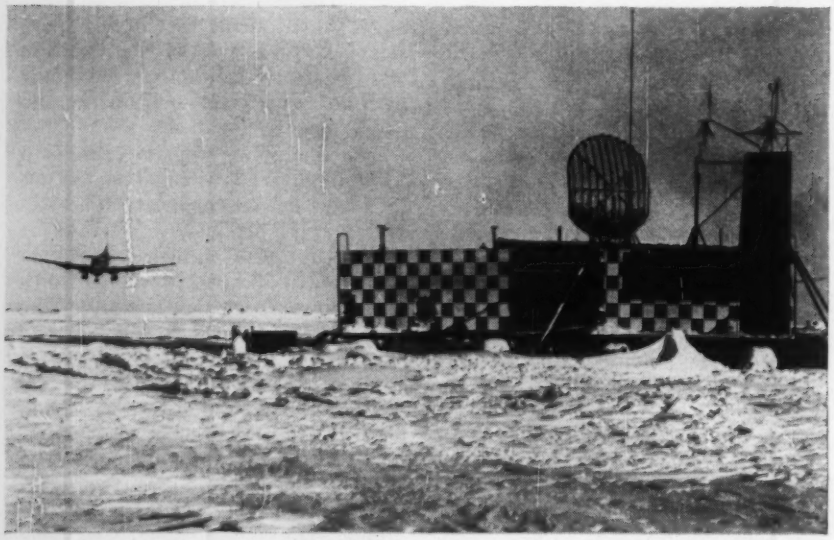
Contracts to be awarded in July include a $200,000 grade separation on US 12; completion of 4-lane pavement over 5 mi of US 131 at a cost of $725,000; addition of two lanes for 10 mi on US 12 at a cost of $2.7 million, and an interchange separating US 112 and the Detroit Industrial Expressway.

# REPORT ON BUILDING THE DEW LINE

## On the rim of the world, construction men... using airlifts, Cat-powered tractor trains, and ingenuity...are buying the nation precious time against a sneak H-bomb attack



**CAT TRAINS** complete transportation of material from the United States to construction bases on the DEW line. D8s tow loaded sleds across ice to the final installation sites.



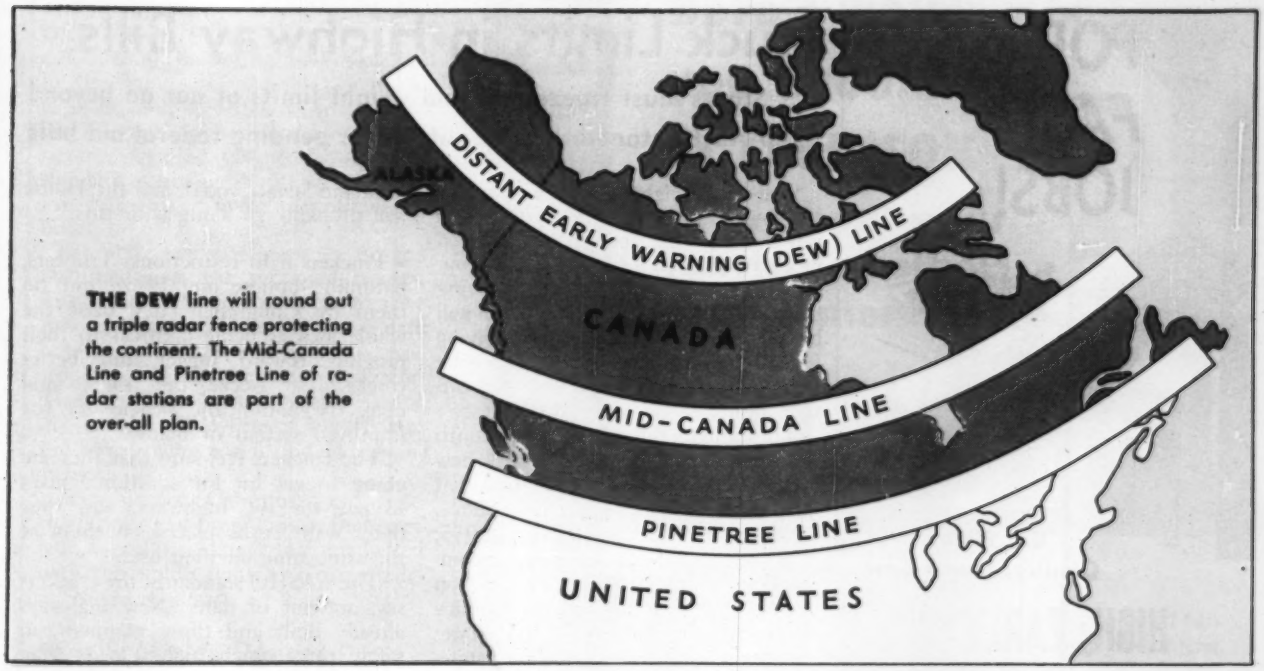
**C-124 GLOBEMASTER**, loaded with material for the Cat trains, approaches for a landing on a snow-covered landing strip. This strip was carved out by Caterpillar-built Bulldozers which cut snow down to bare ice.

Eighteen hundred miles north of Chicago, temperatures plunge to 70 below, blowing snow cuts visibility to zero, and sparse vegetation shatters like glass. Here construction men and machines are battling to carve out the world's greatest Arctic defense project —the Distant Early Warning (DEW) line, a joint U. S.-Canadian venture.

When finished they will have wrung from the Arctic wastes vital extra warning time against a sneak aerial attack. An uninterrupted line of radar stations will maintain a never-ending vigil.

Men and material began moving swiftly and silently inside the Arctic Circle early this year. Ice roads and complete camps were built where none existed a few weeks before. Men and machines had moved in by airlift and CAT*-powered tractor trains.

That was the end result of two years' research and study spearheaded by Western Electric, Bell Telephone System's manufacturing and supply unit. In February, Western Electric




**THE DEW** line will round out a triple radar fence protecting the continent. The Mid-Canada Line and Pinetree Line of radar stations are part of the over-all plan.

was named prime contractor for the DEW line construction. Subcontractors include Puget Sound Bridge and Dredging Company and Johnson, Drake and Piper, Inc., both of Seattle; the Northern Construction Company and J. W. Stewart, Ltd., of Vancouver; and Foundation Company of Canada, Ltd., of Montreal.

Backbone of each of the spreads is Caterpillar* Arctic-proof equipment. It has proved itself building Thule Air Base in Greenland. It has hauled supplies for the Naval Petroleum Exploration Program at Point Barrow. For decades it has served the commercial needs of industry of the north in mining, construction, pulp and similar operations.

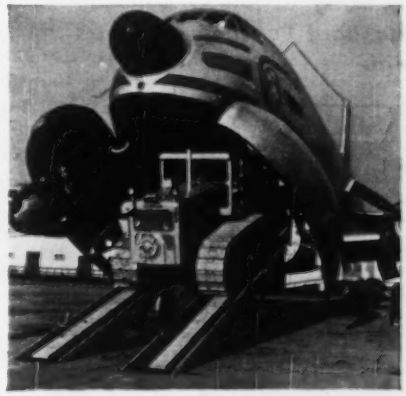
To get the job done it was natural for DEW line subcontractors to rely on their fleets of D4s, D6s, D8s, No. 12 Motor Graders, Traxcavators*, Cat Scrapers and Electric Sets.

Cat trains moved above the Arctic Circle making landing strips and blazing new snow roads through the meager stands of hoar-frosted vegetation which reacted like glass when snapped by bulldozers. Other Cat units followed, flown into the landing strips in the Air Force's big airlift, "Operation Big Haul."

Altogether 6600 tons of tractors, buildings and other heavy equipment were brought in by the Tactical Air Command's 18th Air Force. At the airstrips, construction crews put together hundreds of small prefabricated buildings and bolted them to rounded timbers which served as sled runners. Trains of them were towed by Caterpillar track-type Tractors to various Arctic sites.

All big yellow machines have been winterized to withstand temperatures as low as 70 below. The foresight has paid off. On February 15, nine D8s, all equipped with Caterpillar's new oil clutches, were at a point where the mercury dropped to an all-time low of 76 below! *No trouble was reported!*

A few refinements have been added, such as escape hatches for operators of tractors in the event they drop through the ice.



A D8 is pulled aboard a Globemaster as part of the DEW line airlift at an Alaskan base. Tractors made up a good part of the 6600 tons of cargo which the Air Force flew to advance bases.

Today, north of the Arctic Circle, the painstaking research which goes into all Caterpillar equipment is paying off. For on this vital project . . . on this toughest of all proving grounds . . . only the most dependable equipment can be trusted. Once again the choice has been Caterpillar.

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# Truck Limits in Highway Bills

## States must freeze size and weight limits or not go beyond AASHO standards to qualify under pending federal aid bills

Size and weight freezes for trucks and buses using the Interstate Highway system seem sure to be included in the final draft of the highway-construction legislation now moving through Congress. The proposal will be to disqualify states from receiving federal highway aid if they increase their size and weight laws beyond certain limits.

The Senate bill passed last month would shut off federal money for new highway construction to any state that raised its size and weight laws above: (1) Those in effect as of July 1, 1955, or (2) the weight and size limits recommended by the American Association of State Highway Officials in a policy statement adopted in 1946. States with laws below those set in that statement could increase them up to this level without being disqualified.

The House of Representatives, which is now working on a highway bill, will go along with this except perhaps to make the freeze date Jan. 1, 1956. Action on the House bill should come in about a week.

The AASHO size and weight recommendations were the result of a study made to determine the maximum sizes and weights of trucks and buses that could be operated without damaging the highways.

Congressional thinking behind the idea of putting size and weight limitations on new highways is that since the federal government—under the new bills—will pay most of the cost of work on the interstate system, it should have power to make certain that the highways it pays for are not destroyed by overloading. The wide range of present state regulations and the continual pressure by truckers for increases are the underlying reasons for this action by Congress.

• **Limits may be raised**—The door is not locked by these size and weight freezes, however. At the same time that the Senate voted to hold the limits at their present level, it also directed the Secretary of Commerce to speed up the tests now in progress and to conduct such others as may be necessary to determine just what maximum sizes and weights should prevail on the new highways. These recommendations are to be made to Congress.

Money held back from any state because of raising the size and weight limits—if this ever happens—would be parceled out to other states. That is what the Senate voted, and the House will probably go along with this.

• **Truckers fight restrictions**—Truckers, naturally, oppose any freeze put on them by Congress. They blast the whole idea as being a threat to their progress toward bigger and better trucks. The freeze, they say, would deny the nation the benefits of the improved system of roads.

The truckers feel sure that they are going to get hit for additional taxes to pay for the highways, and they don't want curbs placed on them at the same time for their use.

The AASHO standards, the truckers say, are out of date. New highways already built and those planned can safely carry much higher loads than the AASHO recommends. Example of this, they point out, is the Maryland road test conducted in 1950 that showed that axle loads of 30,000 lb were safe on those sections of the road that had been built to proper specifications. The AASHO recommendation is only 18,000 lb.

Representatives to the American Trucking Associations called on Congress to leave size and weight laws to the states with no strings attached. They said, "It is unsound and impractical to attempt to apply a single set of rigid standards to all parts of the country and under all conditions. The problem can best be handled by the states themselves. If there is any need for federal intervention it is still to be found in the fact that some states continue to apply restrictions that are unduly restrictive and unnecessarily burden interstate commerce."

But freezes seem to be on their way and at the level spelled out by the Senate.

• **Makes little differences**—Actually all of the cry over freezes seems a bit empty. Most states either have the AASHO standard or have standards that are more restrictive. For truck tractors with a semi-trailer, AASHO recommends a length of 50 ft; 36 states use this or are below it, with 12 (mostly western) going higher. For trucks with full trailer, AASHO standard is 60 ft; 9 states use AASHO, 30 are below, 4 above, and 5 don't permit this combination.

On weight, AASHO recommends 18,000-lb. axle loads; 32 states use this, with 16 going higher. AASHO standard for height is 12½ ft. Thirty-three states allow 13½ ft. (or make

exceptions, mostly for auto transporters); 18 use 12½ ft.

On single-unit lengths—busses fall in this group—the AASHO standard is 35 ft; most states allow up to 40-ft. lengths, with stipulations as to number of axles used. On widths, AASHO standard is 96 in; almost all states allow 102 in. or make exceptions for buses.

The states do not seem to be too disturbed over the proposed freezes. There has been no mad rush to raise state limitations before the freeze date becomes effective. Fifteen states passed new size-weight laws this year. Three of these raised weight limits; five increased heights to 13½ ft; and the others were width and length increases.

Two states, California and Vermont, even put provisions in their new laws to nullify them if they conflicted with the state's right to receive federal highway money.

## New Scaffolds Designed For Golden Gate Bridge

Fabrication of a new system of painters' scaffolds for the Golden Gate Bridge is scheduled to get under way in August. A $640,000 contract for the work has been awarded Judson Pacific-Murphy Corp.

The scaffolds, to be attached permanently to the bridge, are designed to eliminate accidents like the 1953 scaffold collapse on the bridge that killed two workers (ENR Nov. 12, 1953, p. 23). The system, designed by Clifford E. Paine, Golden Gate Bridge district engineer, consists of four units. The largest scaffold will weigh 60 tons. Two will weigh 11½ tons each, and the fourth will weigh 7½ tons.

Under the contract the job is to be completed in 270 days. Fabrication of the scaffolds will take place in the Richmond yard of Judson Pacific-Murphy Corp. and then they will be transported—completely assembled—by barge to the bridge.

## Skyscraper Frame Completed

The 45-story skeleton of the world's largest stainless steel skyscraper—the Socony Mobil Building—was completed last week in New York City. Erection of the steel framework was started last November and required 21,700 tons. The building, the city's largest single construction project in 25 years, is being erected by Turner Construction Co. on an entire block at 42nd St. and Lexington Ave. (ENR May 19, p. 28). When completed in 1956 it will be the world's sixth largest office building, with a floor area of 1,600,000 sq ft.


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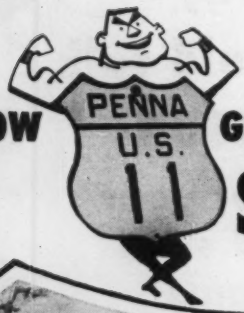


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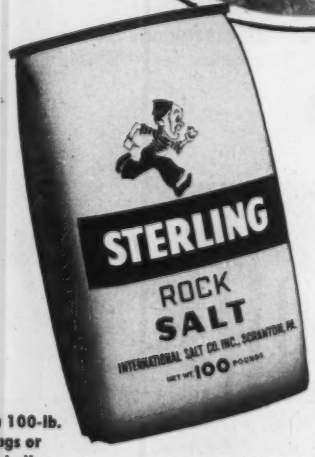


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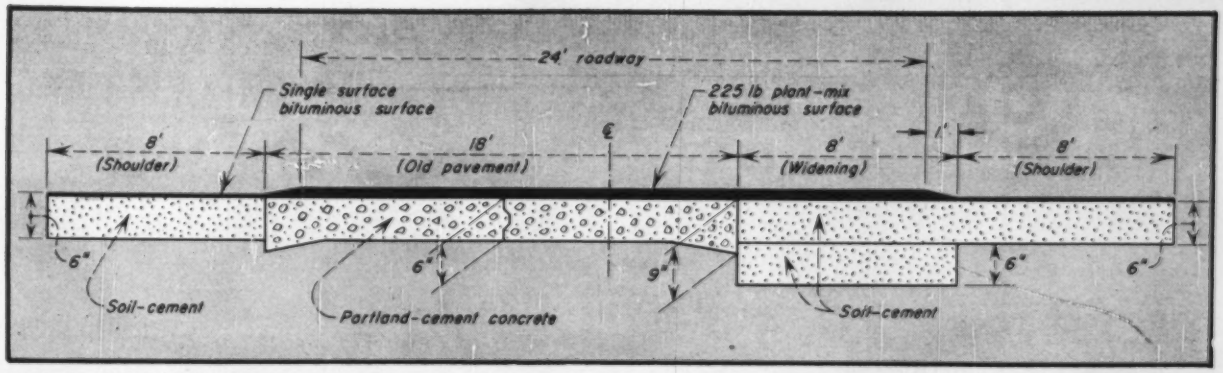
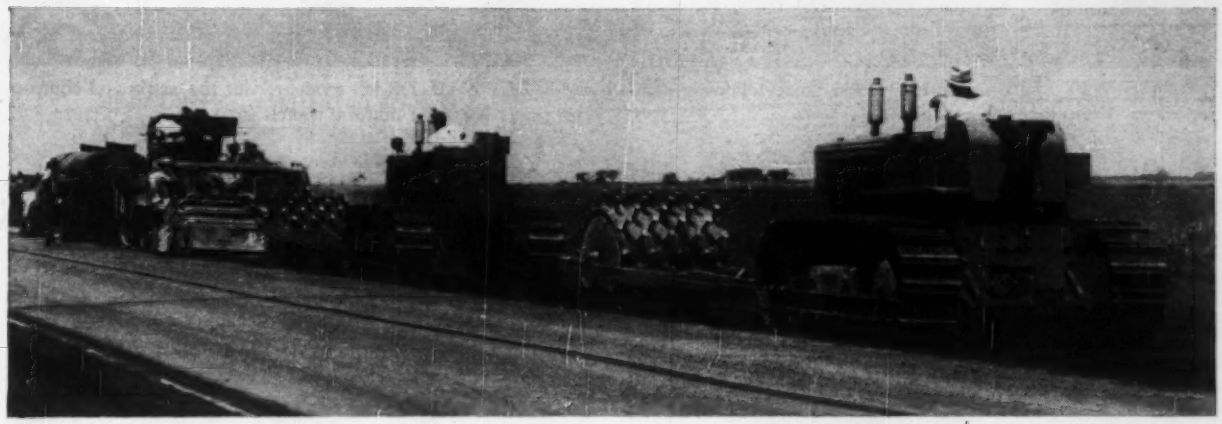



**SAFER, STRONGER, SMOOTHER** Texas road was made of old narrow 18-ft pavement by widening to 26 ft with two layers of soil-cement, adding two 8-ft shoulders, and applying a plant-mix bituminous roadway surface at the rate of 225 lb per sq yd.



**LINE OF EQUIPMENT** includes water tank, one-pass pulverizer for mixing soil, cement and water, and two sheepsfoot rollers.

# Modernizing an Old Narrow Texas Road

- **Pavement was widened 26 ft**
- **Treated shoulders were added**
- **Roadway was bituminous surfaced**

One of the most important aspects of Texas' current highway program is the rehabilitation of old highways built in the late '20's and early '30's which are inadequate for present-day traffic. This modernization usually involves widening 16- and 18-ft pavements to 24 ft and resurfacing. With over 34,000 miles of highways to maintain, the Texas Highway Department has been obliged to put economy first when improving these old highways.

An interesting application of soil-cement for pavement widening was made last construction season on a 13-mile stretch of U. S. Highway 277 in Knox County between Wichita Falls and Abilene.

As shown in the accompanying cross-section through the roadway, soil-cement was used three ways: As a subbase under the pavement widening; in the pavement widening itself; and in shoulders along both sides of the road. The 8-ft wide soil-cement shoulders were given a single bituminous surface treatment and the entire 26-ft roadway was given a hot-mix bituminous surfacing applied at the rate of 225 lb per sq yd.

• **Not a new method**—This soil-cement widening, shoulder work and bituminous surfacing wasn't a new method to the highway department. But this particular job was the first time soil-cement widening had been tried on such a scale in District 25. Results were so satisfactory that a similar project, involving 21 miles of soil-cement widening was scheduled for this season's program in that district.

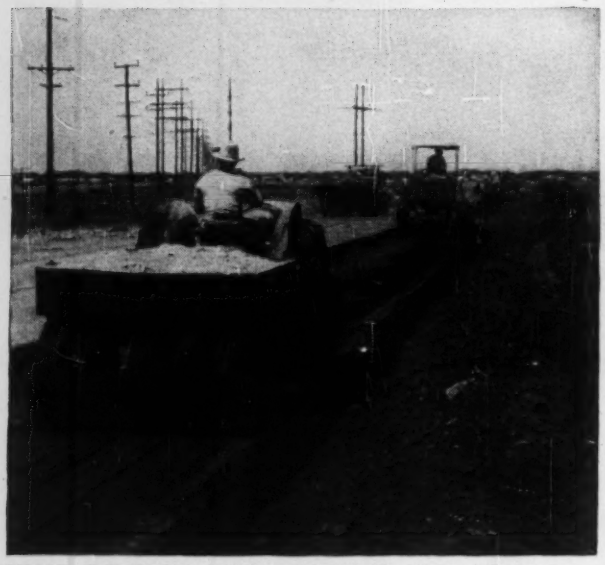
• **Why soil-cement**—One of the chief factors in selecting soil-cement for widening the 13 miles of U. S. 277 was that the "in-place" soil could be used in all but a few small sections. Otherwise, a long haul would have been necessary to obtain enough suitable granular material.

The old pavement was 18-ft wide, 9-6-9-in. concrete slab built in 1929. It was still in good condition except for one short section on a bad clay subgrade. But it was too narrow for the volume of traffic using it. On a normal day the average of the 10 heaviest wheel loads passing over this stretch of highway is 10,000 to 12,000 lb. This requires a 12-in.-total thickness of soil-cement using the Texas design method. In order to meet this requirement a 6-in. subbase of soil-cement was placed beneath the 6-in. thickness of soil-cement widening.

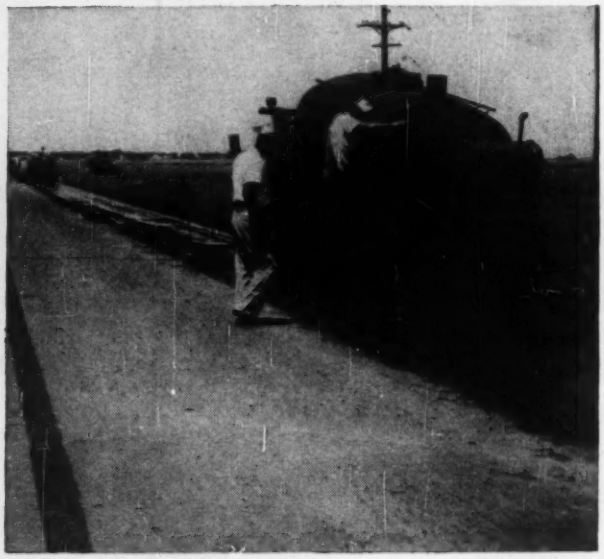
Laboratory tests on the sandy loam soils in place showed that 6% cement would be adequate to produce the required strength pavement. In a small area of heavy clay soil, it was found to be more economical to use a nearby granular borrow material. Contract for the job was let to the Uvalde Construction Co., Dallas, on

SUBBASE WAS BLADED to crown and grade following compaction by sheepsfoot rollers, then . . .

JOB-BUILT NAIL DRAG scratched out tire marks and compaction planes leaving a uniform mulch for . . .



FINAL COMPACTION by rubber-tired rollers and . . .



SEALING with an RC-2 asphalt at rate of 0.2 gal per sq yd.

their low bid, which amounted to about 60¢ per sq yd of 6-in. thick soil-cement in place with curing seal.

• **How it was done**—Construction began with blading aside the top 6 in. of soil on the side where the 12-in. thick widening was to be built. The lower 6 in. of soil, which was to form the subbase, was loosened with a scarifier. Raw soil was moved away from the old pavement edge by a plow attachment on a motor grader to make sure that no raw soil was left between the soil-cement and the concrete slab.

A cement spreader added the necessary cement over the area to be processed. The soil was then pulverized, mixed dry with the cement, moistened, mixed wet, and left in a uniform layer by a one-pass mixing machine. The soil-cement mixture was compacted by sheepsfoot and rubber-tire rollers. A job-built nail drag was pulled over the surface near the end of compaction operations to remove tire marks and compaction planes near the surface before final rolling by the rubber-tire roller.

After the 6-in. subbase of soil-cement was completed, it was trimmed to proper level by a grader with a special wheel attachment which controlled the blade's depth below the top of the old concrete pavement. Soil then was bladed back over the completed subbase and a 16-ft wide top layer was processed in the same way as the subbase. This 16-ft width included both the 6-in. layer of widening and the 8-ft wide shoulder paving.

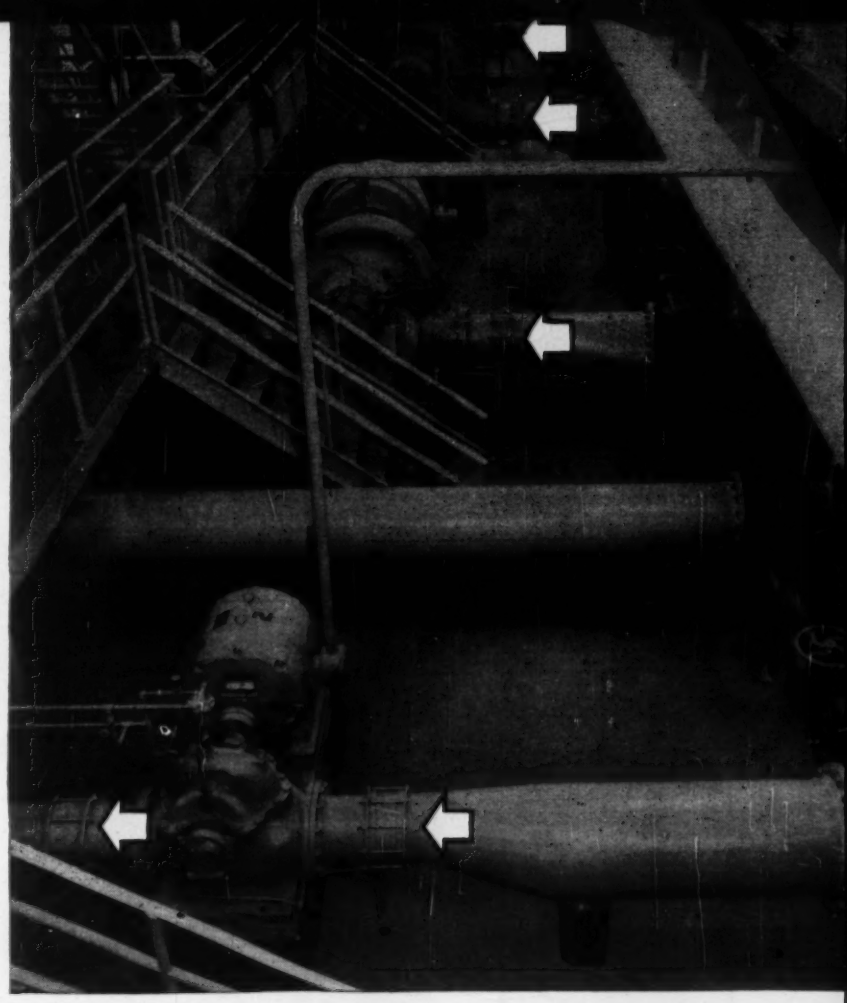
The soil-cement work was completed with construction of the 8-ft wide shoulder on the opposite side of the concrete pavement. This was also constructed with in-place soil. All soil-cement was cured with an RC-2 asphalt, applied at a rate of about 0.20 gal per sq. yd.

A 225-lb per sq yd hot-mix bituminous surface was placed over the 24-ft width of the widened highway. A 12-in. taper at each of the outer edges makes a total pavement width of 26 ft. The 8-ft shoulders on each side were covered with a single bituminous surface treatment.

Herbert Cunningham, senior resident engineer, supervised construction for the Texas Highway Department. The contractor's forces were directed by A. E. McCook, superintendent.

## SPEAKING OF PUMP PIPING

The Elm Fork Water Plant Pumping Station of Dallas, Texas, doubles the city's purified water supply with its capacity of 105 mgd at 150 psi. Dresser Style 38 Couplings were installed on suction and discharge lines connecting high lift station pumps (right) and on discharge side of low lift pump (below)... to take care of movement or misalignment, and to make installation and disassembly easy. Consulting engineering was by Myers and Noyes and Associates; the contractor was E. E. Farrow Company.



# DOUBLE DUTY FOR DALLAS

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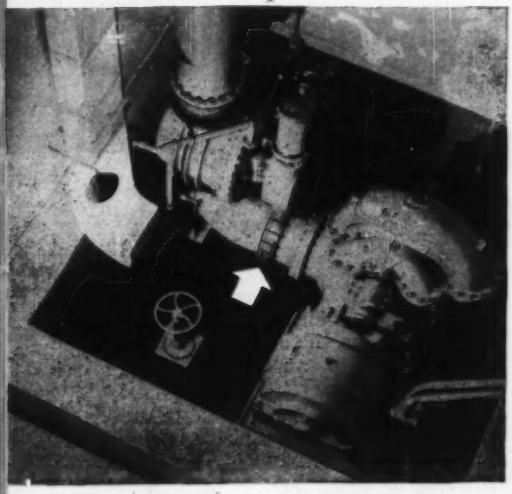

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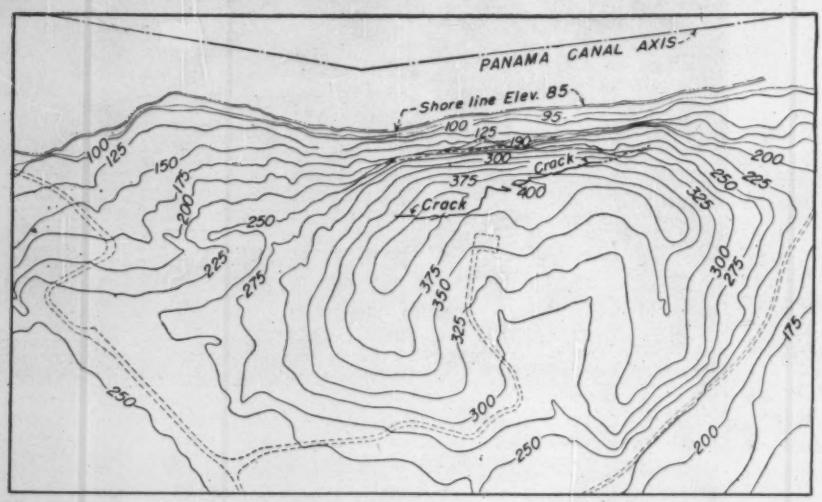
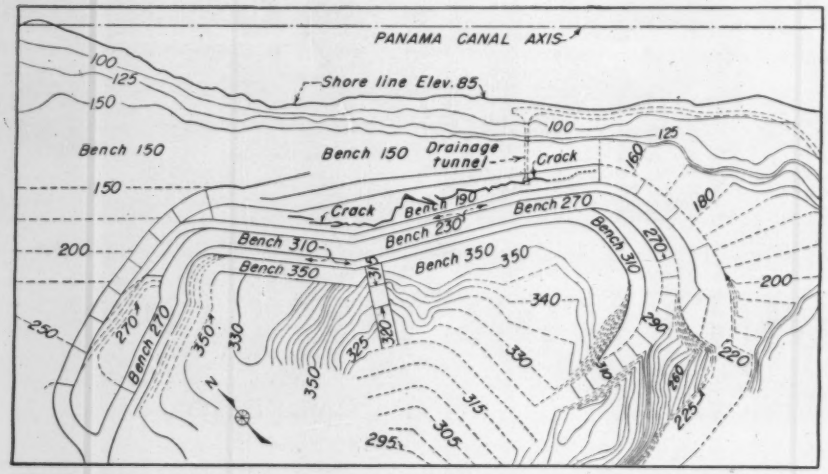



LOCATION OF FISSURE shows clearly in plan view of hill before work started.

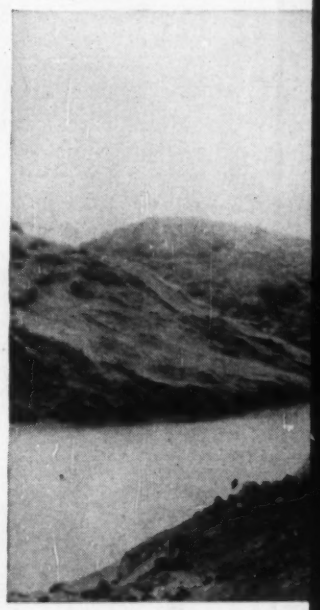
## The Problem

DEEPENING FISSURE (right foreground) threatens to loosen huge section of rock into Panama Canal, 400 ft below. Removal of this threat was the problem.




FINISHED JOB will look this way, when contractor, completes his work in September.

## The Answer



SHAVE AWAY THE ROCK of the hill in a series of benches sloping back from the water line. Jungle growth will cover harsh outlines in less than a year.

# Panama's Contractors Hill: Handle With Care!

**E. E. Halmos, Jr.**
**Managing Editor**

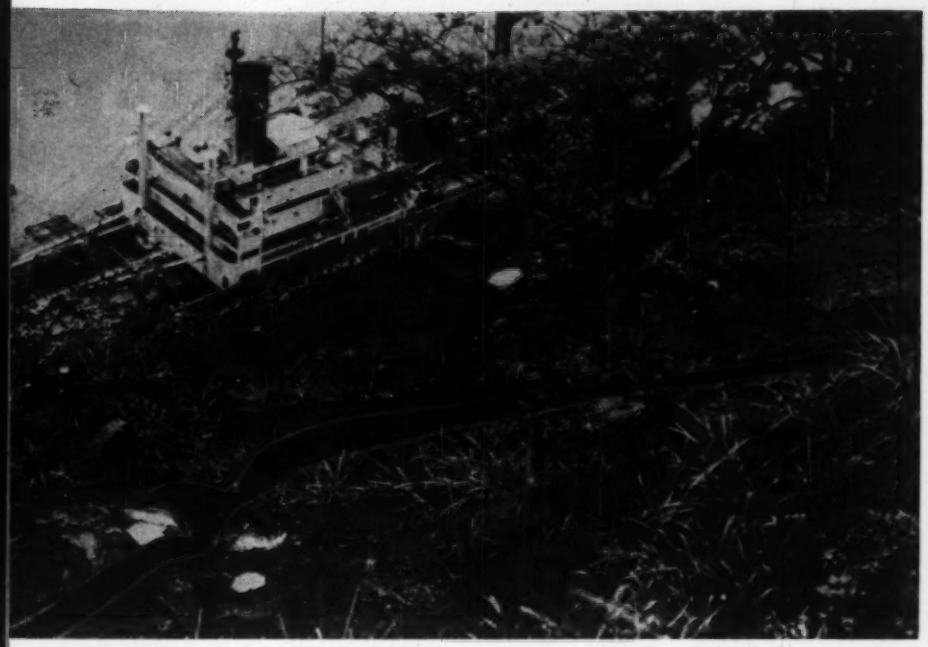
When the problem is to shave off the top and sides of a mountain to the tune of something like three million cubic yards of rocks—that's difficult enough for the contractor.

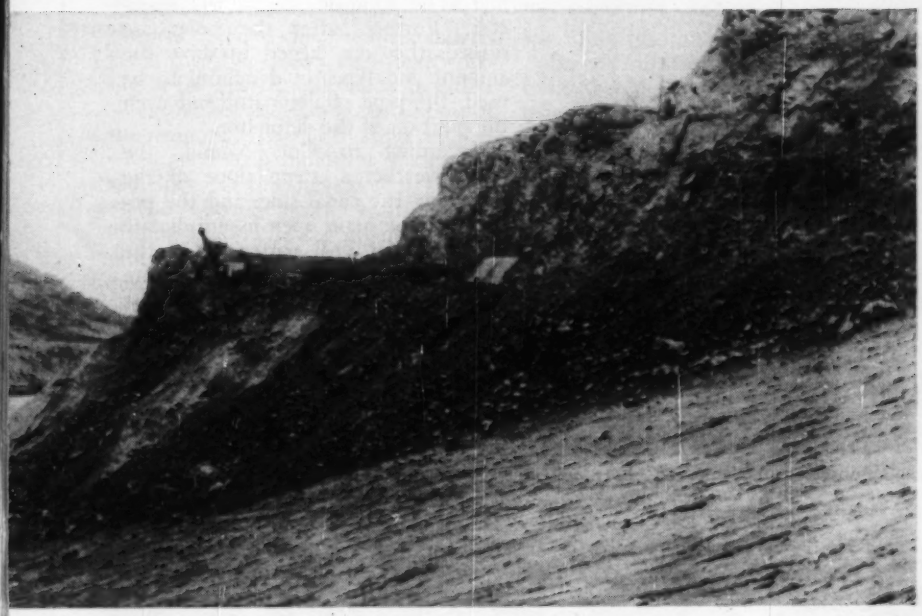
But when the "mountain" happens to be Contractor's Hill, almost overhanging the Panama Canal, and is composed of some of the most peculiar rock in the Western Hemisphere—and when no substantial part of it may be permitted to drop into the canal to impede shipping—there you have a real problem.

With a combination of great skill, care, construction knowhow—and just a pinch of luck—Tecon Corp., of Dallas, Texas, is solving the problem rapidly. Well ahead of schedule, Tecon expects to finish by early September converting the knob that was Contractors' Hill into a series of 40-ft. steps receding back from the canal.

• **What happened**—When news stories more than a year ago (ENR May 6, 1954, p. 23) reported the "discovery" of a dangerous crack near the summit of Contractors' Hill, many a commentator was inclined to sensationalize the story and the attendant danger of closing of the canal itself, should the rock slip further.

The fact that a crack existed was no news to the Panama Canal Company, the government agency operating the canal, or to Brig. Gen. John S. Seybold, Governor of the Canal Zone, or his staff. Fissures of this kind have been familiar to engineers who have worked on the canal throughout its nearly 41 years of operations. Almost





from the day, early in 1906, when U. S. engineering forces began the task of finishing what an ill-starred French company had started, rock slides in the knobby hills that form the backbone of the Panama Isthmus have been a problem. The canal has almost never been without the presence of maintenance dredges, and the dredging division remains today as one of the most active arms of the Canal Company.

The crack on Contractors' Hill had been under observation by survey parties since 1938. Running parallel to the canal for a distance of nearly 1,000 ft, it had, by early 1954, been probed to depths of up to 600 ft. (the top of Contractors' Hill was at El. 417 ft), and it was apparent that a huge wedge of rock between the hill itself and the canal might be sufficiently loose to pose a danger to the waterway.

The danger arises from the fact that Contractors' Hill forms one side of the deepest cut and the narrowest point on the 44-mile length of the canal. With 650 ft high Gold Hill, 300 ft across the canal water line, Contractors' Hill forms what was known originally as Culebra Cut—now known as Gaillard Cut. Other sections of the canal are about 500 ft wide at the water line.

• **Remedy**—A four-man team of consultants was assembled almost immediately (ENR May 13, 1954, p. 25) and after a careful study came up with these recommendations:

• Construct a 5x7 ft tunnel into the hill just above water line on the canal side that would intercept and drain water seeping down through the main crack;

• Remove about one-half the weight of the free block of stone on the canal side of the fissure, and additional rock from behind the fissure to allow access to the work area, but not so much as to disturb the somewhat delicate balance of the hill and other hills around it.

This was to be accomplished by cutting off the top of the hill, down to El. 350, and then benching the sides of the area parallel to the canal, in a series of huge steps, from El. 85—canal water level.

With the extent of the work determined as far as was practicable without actual excavation to uncover subsurface conditions, the Canal Company wasted no time. Late in May 1954 it engaged Tecon Corp., on a contract calling for about $3.5 million, to do the job in 15 months.

• **And so to work**—Ten-year old Tecon wasted no time either, in assembling machinery it figured it needed, and shipping it to Panama. Tecon's previous jobs—numerous airbases and highway jobs—provided General Manager A. Ray Smith a good indicator of what would be required.

The equipment list Smith thought he needed—and which proved adequate to keep the job ahead of schedule—includes:

Fifteen 14½-yd end-dump trucks; three heavy power shovels carrying 2½-yd buckets; one patrol grader; six pickup trucks; three 1½-ton utility trucks; three truck-mounted drill rigs; two tractor-mounted wagon drills; four crawler tractors, and miscellaneous shop equipment.

The 50 slow-talking, deceptively easy-going East Texas construction men Tecon brought to the job got some surprises. They found native labor (the company employs about 100 natives for all types of work) was good, willing, and easily trained; the climate not at all unbearable; the area (thanks to early and continuing efforts of U. S. sanitary experts) almost completely free of insects of any kind; the cooperation from the Canal Company's engineers excellent.

• **Baked potato**—But the job itself is anything but easy. According to John H. Wiley, resident engineer, it's "the most aggravating—but the most interesting—I've seen."

The reason is the geology. In

Wiley's phrase, Contractors' Hill sits like a huge, hard baked potato, on a pile of mush.

His description is an apt one—the hard core of the hill is made up of a badly-fissured volcanic agglomerate, shaped almost exactly like an Idaho potato (a potato roughly 2,500 ft long and 417 ft thick). The skin of the potato consists of two or three layers of harder rock, varying from about two to four feet thick. And the salt on top is a layer of exfoliated rock loosely held to the "skin" by a final covering of clay and thick jungle foliage.

The whole mass rests on the peculiar shale formation known locally as Cucaracha (cockroach) shale—an odd, greyish-blue mass than can ruin a drill bit in a comparatively few feet of drilling, but begins to disintegrate to a greyish dust within hours of exposure to the elements. This shale itself is interlaced with veins of volcanic ash.

The potato's center—the agglomerate—presents further complications in that bedding seams and transverse fissures run at short intervals into the rock at right angles to the canal. In addition to sometimes unpredictable breakage, these fissures provide escape avenues for gases, and again disrupt calculations of results of a blast.

A geologic history that includes a repeated succession of sea-bottom upheaval, erosion, volcanic action, and constant movement as unequal weights of rock were deposited on the unstable shale is the explanation for the peculiar formations, according to Col. Hugh M. Arnold, engineering and construction director for the Canal Company.

These same formations, in fact, have been the base cause of the almost constant slides along the canal in the area around Gaillard Cut. Helped by the unbelievably luxuriant jungle foliage, cracks develop in the rock, water seeps through and eventually loosens large sections of the stone to slide toward the canal.

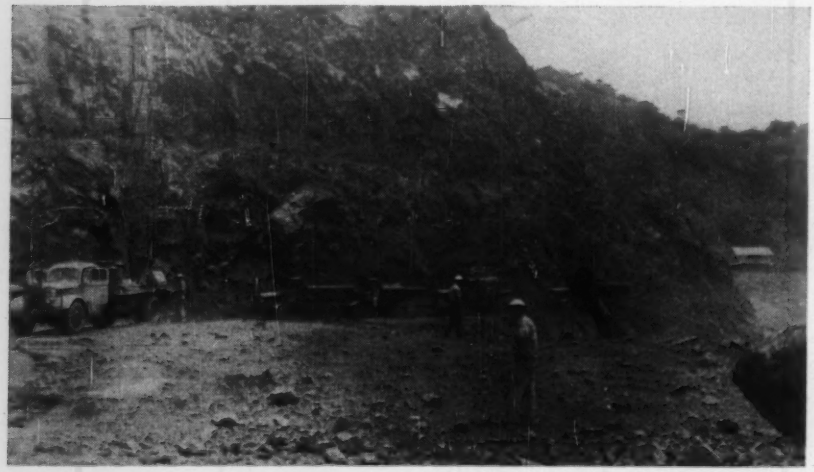
Further damage is done by the unstable "mush" that forms the base of the country—unbalanced loads, coming onto the shale bed suddenly, cause the shale to shift in unexpected directions, again causing new cracks in the rock.

• **Blasting is key**—Since the engineers had decided to cut the hill back from the water line in a series of steps varying from 20 to 40 ft high and from 20 ft to over 100 ft wide, and since the work had to be done in the uncertain rock and in the ever-present danger of a massive slide, the method of blasting became the key to all the contractor's operations.

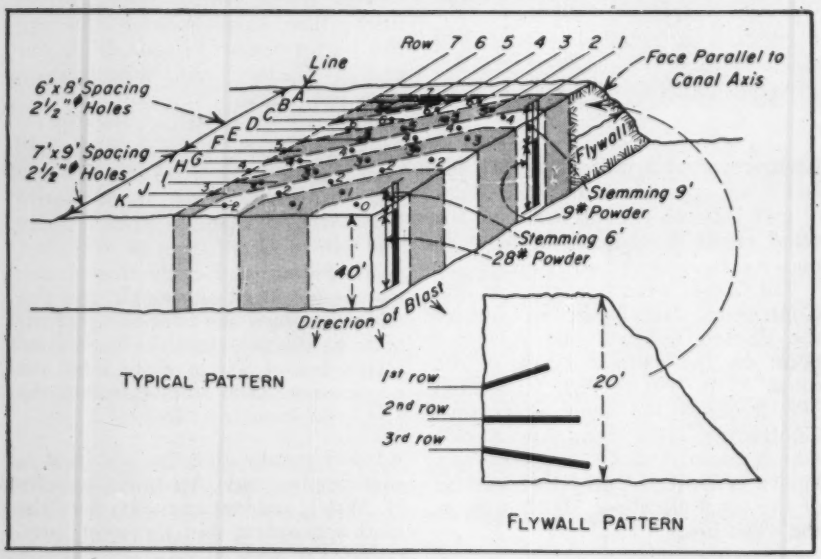
Careful planning of the drilling and shooting program was an absolute must. Each proposed shot must be laid out on paper and approved by the Canal engineers even before drilling is started. Then drill patterns are staked out on the ground (marked usually by painted rocks), and every hole is specified as to location, depth and diameter. Further, after the holes are drilled, they are tagged to show the amount and types of dynamite to be used, the type of detonator and even the position of the detonator.

According to Col. Arnold, the highly-weathered, steep slope of the hill along the canal side, and the position of the main open fissure dictate the layout of drill patterns. On the canal side of the fissure, holes are placed closer to the fissure than the distance to the next row. Landward of the fissure, holes are closer to each other than the first row is to the fissure (ENR Feb. 24, p. 35).

As the great benches are blasted out, a 20-ft wide band of rock is left in place on the canal side, to serve as



**TRUCK TRAIN** awaits loading, while truck-mounted drill works on 40-ft hole.



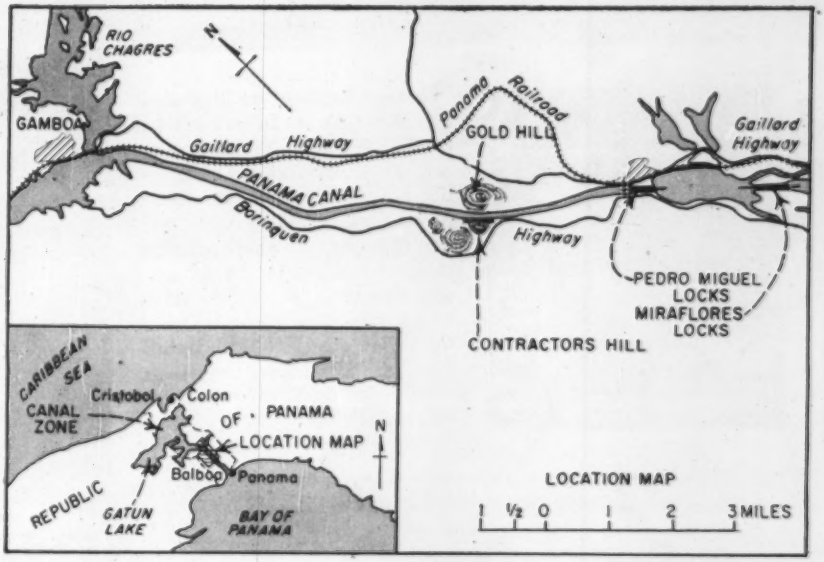

**BLAST PATTERNS** designed to throw away from canal. Flywall gets light charges.

**DRILLING** for next shot is a careful process, with depth, size and spacing of each hole precisely calculated.

a flywall and additional protection against falls of rock. This flywall is last to be removed.

To date, in shooting all but the flywall, 0.5 to 0.6 lb of powder has been used per cubic yard of rock, and millisecond delays—up to 7 milliseconds—are used to cause the base of the face to kick out first and thus control the direction of the throw inward to the hill and away from the canal.

Canal Company officials agree that Tecon has done a remarkable job on controlling the rock it is blasting—losing, to date, less than 1% into the canal. A dipper dredge, engaged in routine maintenance elsewhere, is always available to clear excessive debris.




• **Procedure**—Tecon, working to a target of about 200,000 cu yd rock per 30 working days, uses its three shovels and the dump trucks in a closely coordinated action.

The shots on the hill face are figured to produce an average of about 2,000 cu yd of rock each (though some have gone as high as 4,000 yd). As soon as a shot has been made and the area declared safe, the three shovels crawl into the quarry area—one working in the center, and one from either side (roughly north and south sides) of the main hill. Two of the four tractors —equipped with bulldozer blades, act as helpers for the shovels.

The shovels work continuously, loading the trucks for about a 2,000 yard haul to the spoil area—an abandoned reservoir used originally during construction of the canal—lying back of Contractors' Hill.

Tecon had trouble almost immediately with this spoil area. According to Project Manager J. L. Phillips, dumping of heavy loads of rock into the reservoir area, and along the edge of an Army-built road that was originally used as a haul road, caused shifts in the underlying shale and rock, and splits at the surface. One of Tecon's bulldozers is now kept busy spreading the rock as it is dumped.

Biggest problem for Tecon—aside from the blasting—has been tires for its wheeled equipment. The constant pounding on the abrasive agglomerate knocks out tires very quickly. But the used carcasses have proved a gold mine for the Canal Company and for operators of banana boats on the canal: They make fine boat fenders.

Another problem has been drill bits. Drag bits are good for about 800 ft, says Parts Manager C. W. Weaver, rock bits go on one hole (40 ft).

Maintenance has proved to be no great problem—deliveries of parts from the United States are good, and facilities set up at the job site (about 16 miles from Panama City) have been adequate. One of the contractor's great fears—the damage that a tropical climate could do to metal—hasn't materialized either. "Things don't stay in the bins long enough to rust," comments Weaver.

• **Not done yet**—Having removed (as of June 10) about 1,500,000 cu yd of rock and 500,000 cu yd of shale, Tecon figured it has 400,000 yd to go to complete its original contract.

Meanwhile, Canal Company officials have added the removal of about 250,000 cubic yards of cucaracha at the north side of the hill down to water level, and are considering having Tecon drill and blast approximately 185,000 cubic yards of cucaracha below water level to the bottom level of the canal. The latter material would then be removed by dipper dredge.

**RESULT OF MAIN BLAST** is to clear a bench like this one, about halfway down the slope, with flywall left standing for more careful handling. Dipper dredge clears debris from waterway.

**TAKE IT EASY!** Removal of shattered rock in flywall is ticklish job for shovel operator working on edge of hill. Canal traffic is unimpeded during operations.

**"Torture-Testing" Builds Axles** that can take it. In our indoor proving ground, we have concentrated every hazard of a million miles of driving. TDA axles prove themselves against tests like this one . . . where an axle shaft is twisted 14° backwards and forwards, 36 times a minute, for months on end. Other tests simulate a 3,000 mile uphill haul with a full load. Only tests this rugged could produce axles this serviceable.

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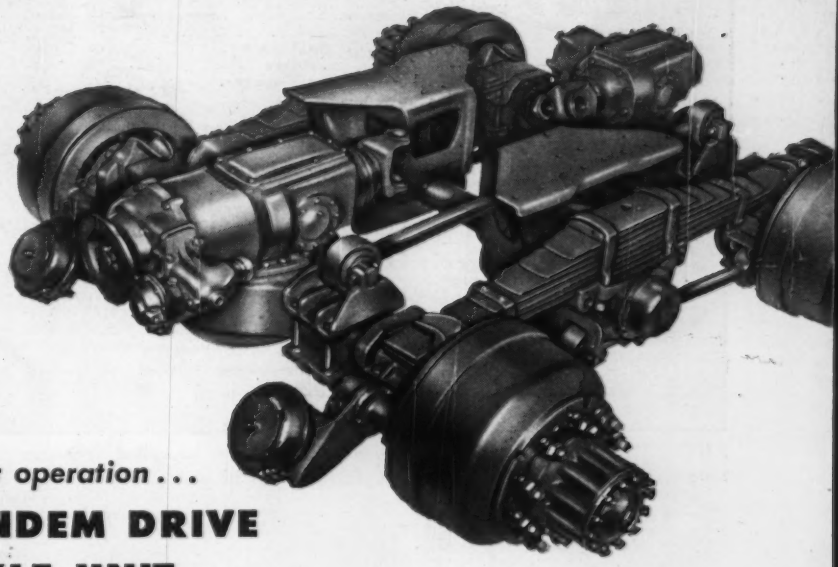
**How TDA Inter-Axle Differential cuts truck and tire wear! With cab-controlled lockout!**

When tandem tires are mismatched...or when tandem trucks are going over rough grades . . . one set of wheels must turn faster than the other or be dragged. TDA Inter-Axle Differential permits either wheel to do this when necessary. Also, with TDA, the driver can, when necessary, lock out the differential and obtain a straight-through drive in mud or sand.



**THREE TYPES:** Hypoid-helical double-reduction, optional inter-axle differential. Worm drive, without inter-axle differential.

*For six-wheeler operation . . .*

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And with these features, developed, introduced and pioneered by TDA: (1) Available in 3 types of final drives and 3 capacities. (2) Top-mounted straight-line final drive eliminates propeller shaft angularity. (3) Optional inter-axle differential . . . spur gear design, cab-controlled power-lockout. (4) Torsion flow axle shafts . . . guaranteed for 100,000 miles or three years, whichever occurs first. (5) Hot forged steel axle housing . . . guaranteed for the life of the vehicle. (6) Unit-mounted "P" series power brakes . . . for longer life, greater economy and efficiency. (7) Cradle ride spring suspension and paralleled torque rod system . . . maintain correct alignment and weight distribution regardless of driving and braking conditions. (8) Exclusive two-piece trunnion tube bracket speed servicing. (9) Removable torque rod and spring guide brackets . . . for positive alignment, easier replacement. (10) Rubber torque rod bushings and rubber spring seat bushings . . . eliminate metal-to-metal contact. Require no lubrication.

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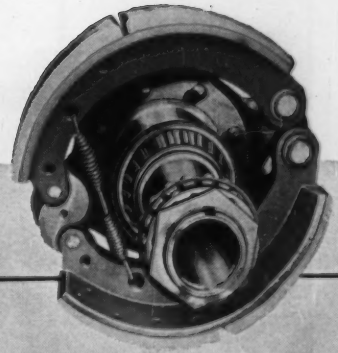

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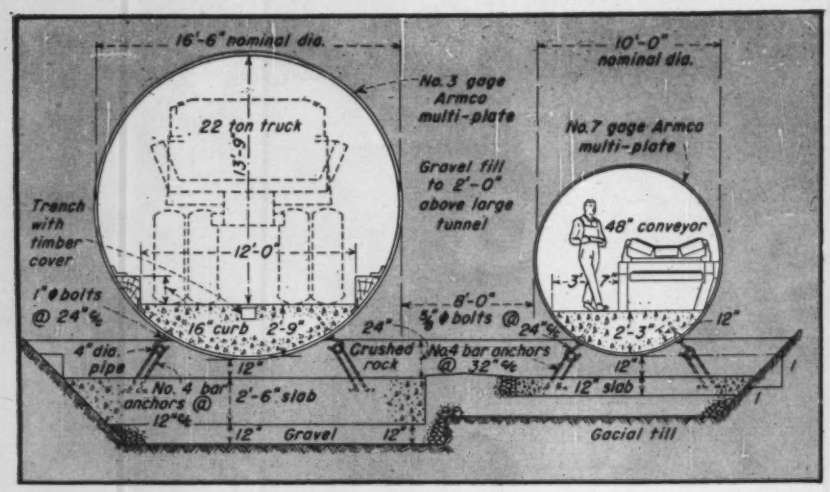
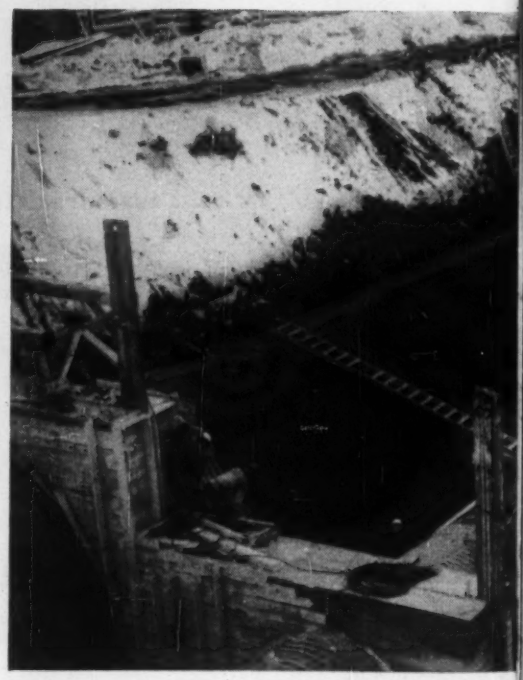



PIPE TUNNELS are anchored to concrete slabs and backfilled with care to avoid movement, leakage. Both tubes are of corrugated metal plate. Tunnel length is 368 ft.



### Ontario Hydro Cuts and Covers . . .

# Tunnel Access to St. Lawrence Power Project

Ontario Hydro has tunneled under Cornwall Canal to its work on the Barnhart Island Powerhouse of the St. Lawrence power project. While winter had canal traffic frozen to a standstill, workers of the Hydro-Electric Power Commission of Ontario put two cut-and-cover, corrugated-steel access tubes beneath the canal—one for vehicles, the other for a belt-conveyor and walkway.

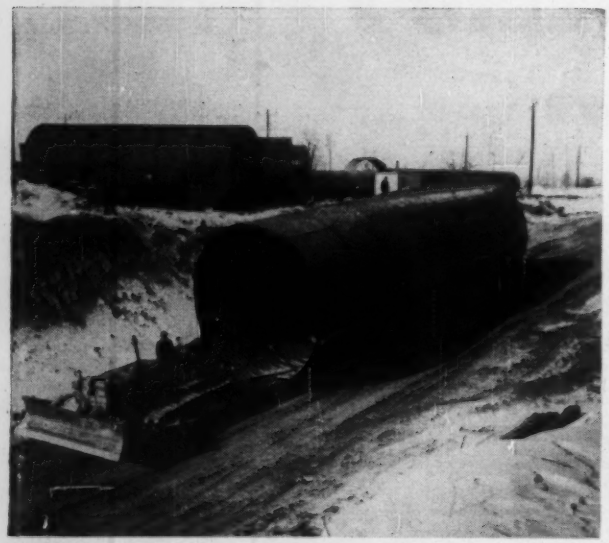
The double-barreled tunnel had economic advantage over bridging the busy canal west of Cornwall, Ont. And according to W. M. Hogg, field project engineer for Ontario Hydro, the canal was opened to shipping on its scheduled date of April 18, with both tubes completed and free of leaks.

Last fall when work was started on the Mannix-Raymond Co. contract for powerhouse cofferdams, access to the work was by an upstream bridge and a tortuous road along the canal, where ship hawsers had to be cast off their moorings to let vehicles pass. The two new tunnels are great timesavers.

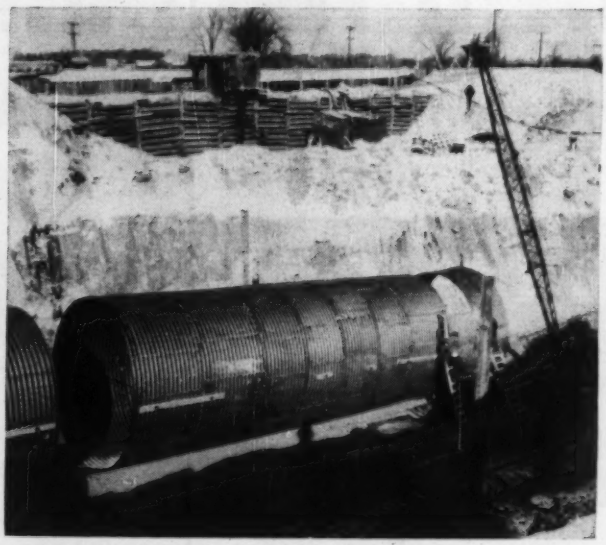
Both tunnels are made of corrugated metal plate. The supplier, Armco Drainage & Metal Products of Canada, Ltd., had two construction superintendents on the Ontario Hydro payroll during assembly of the big pipes.

The larger pipe (16-ft 6-in. inside diameter) is of No. 1 gage metal and will pass the large construction equipment on the job. The smaller (10-ft inside diameter) pipe is No. 7 gage and carries a 48-in. conveyor belt while also serving as a pedestrian underpass. Both pipes are slightly eliptical with the long axis vertical.

Tunnel foundations and anchorages against uplift appear in the draw-



ASSEMBLED LENGTHS were braced into eliptical shape and hauled into place. All joints are bead-welded.



JOINTS, INCLUDING ELBOWS, between assembled lengths were made in field by bolting and welding plate inserts.

**CONSTRUCTED DURING WINTER**—Two pipe tunnels were placed behind cofferdams while winter freeze had the canal closed. Concrete collars encase sheet-steel cutoff at either end.

ing, as do pavements and a drainage trench in the larger tube. Gratings across tunnel portals intercept surface water, and others at low points catch water for sump-pump collection and discharge.

Tunnel length is 368 ft portal-to-portal, and there is a 250-ft approach ramp at each end. Ramps slope at 1 on 10 and the center 150 ft of each tube slopes down $\frac{1}{8}$ in. in 12 ft riverward. Slope transitions are made by "elbows" in the pipes and vertical curves formed in their roadway paving.

**WATERPROOFING** includes neoprene washers plus painting with compound.

Pipe for the tunnels was assembled on the north shore of the canal. Special $\frac{3}{16}$-in.-thick neoprene washers were used under bolt heads and nuts, and all seams were bead-welded inside and out to assure waterproof joints. After enough bolts had been placed to hold the joint, air wrenches were used in tightening the complete assembly. Then bolt-heads were daubed with a waterproofing compound.

The large diameter pipe was assembled into 48 to 56-ft lengths; the smaller into 100-ft lengths. Steel struts held the assembled pipes eliptical as they were rolled onto sleds and hauled into position.

Pipe lengths were not butted together, but rather were spaced 6 or 8 ft apart so that one plate-length of pipe could be bolted and welded in place to make the joint.

Concrete diaphragms were poured at canal-bank lines to encase sheet-pile cutoff walls. At these diaphragms the pipe was reinforced by a second, outer thickness of corrugated steel 12 ft long and bolted on.

**SHIPPING UNINTERRUPTED**—Men and machines to build Canadian half of Barnhart Island Powerhouse on the St. Lawrence have tunnel access to their work.

Timber-crib headwalls at tunnel portals retain a backfill of fine crushed gravel. This was tamped under the pipe haunches by hand, and above that by powered tampers.

Tunnel interiors are painted and lighted. A signal system controls traffic in the vehicular tube.

Ontario Hydro designed this access facility and constructed it with E. J. Coleman as superintendent and W. F. Dechman as divisional engineer. Technical assistance came from Hydro's research soils engineer, J. I. Adams, as well as from Gilbert Hogg and George Crombie, Armco representatives on the job.

# A ***BARGAIN***

# THAT BY-PASSES THE DISTRIBUTOR

# ***IS NO BARGAIN AT ALL!***

In these times of mounting production costs, many purchasers of industrial supplies and materials are beginning to look upon their distributors as an extra expense. At first blush, it might *seem* cheaper to buy direct from the maker.

Actually, the distributor helps *both* the buyer and manufacturer save money. Like this:

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He saves the manufacturer the cost of heavy inventory maintenance in all parts of the country, the expense of an army of salesmen, a fleet of trains and trucks, and a staff of credit and collection experts. In a sense, your distributor represents a cooperative distribution facility that you share with all other firms in your area.

Next time you're tempted to get a direct quotation from the manufacturer, whether on a big or small item, figure out *all* the costs—not just the first cost—and you'll find you gain much more, yet in the long run pay no more, by utilizing the services of your distributor.

**WICKWIRE ROPE**

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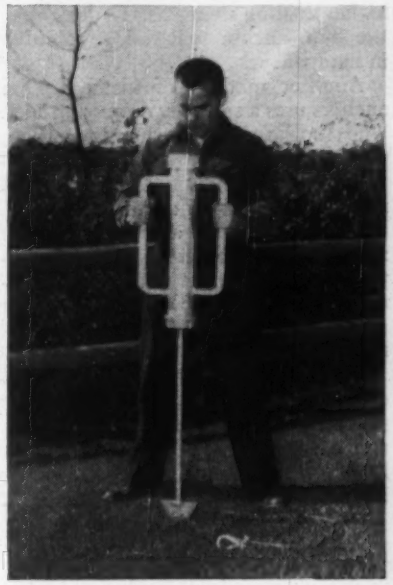
A PRODUCT OF THE COLORADO FUEL AND IRON CORPORATION

# NEW PRODUCTS

## Simple Unit Offers Solution To Ground Anchoring Problem

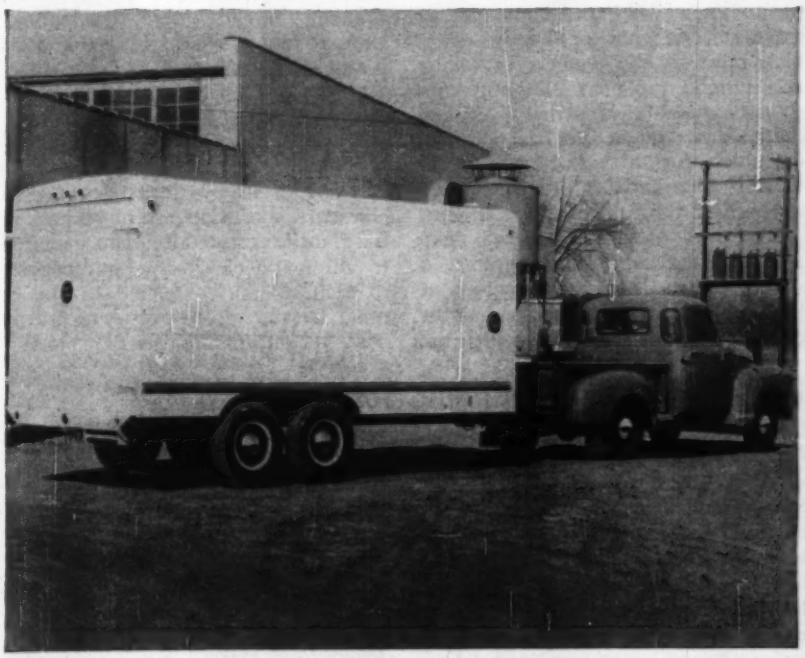


Fast installation with security in all types of soil is claimed for the Universal ground anchor. The anchor is triangular in shape with two holes drilled in it so that cable may be attached.

Installing the anchor is simple. A driving rod or a piece of ordinary steel pipe is placed over the short spindle on the anchor and this assembly is driven into the ground by striking the rod with a sledge. When the anchor has been driven the rod is pulled out and a guy line is attached to a previously attached anchor line. The anchor can be retrieved for reuse from medium or soft soils with a shovel but this is considered impractical when the ground is hard or frozen.

When installing the anchor in frozen ground, it is advisable to start the anchor by striking the spindle directly with the sledge. Once started, the operation is the same as above. When the anchors are driven into permafrost or frozen soil they usually achieve maximum holding power with considerably less depth of penetration than would be required in the case of unfrozen soil.

Holding power will vary with soil and anchor size, but a 4-in. anchor driven to a depth of 36 in. will hold 800 lb in sand, 3,000 lb in clay, 5,000



## 4-Ton Trailer Can Be Hooked to Pickup

A new vehicle, a junior semi-trailer, has been designed for use with pickups or other light trucks. It is free-standing and, according to the manufacturer, can be hooked up by one man in a matter of minutes. With its payload capacity of 4 tons inside an enclosed area of 710 cu ft, it enables the pickup truck owner to transport large loads while retaining the pickup's flexibility for lighter loads. Price $1,395 fob factory. Wells Cargo, Div. of Prairie Schooner, Inc., Elkhart, Ind.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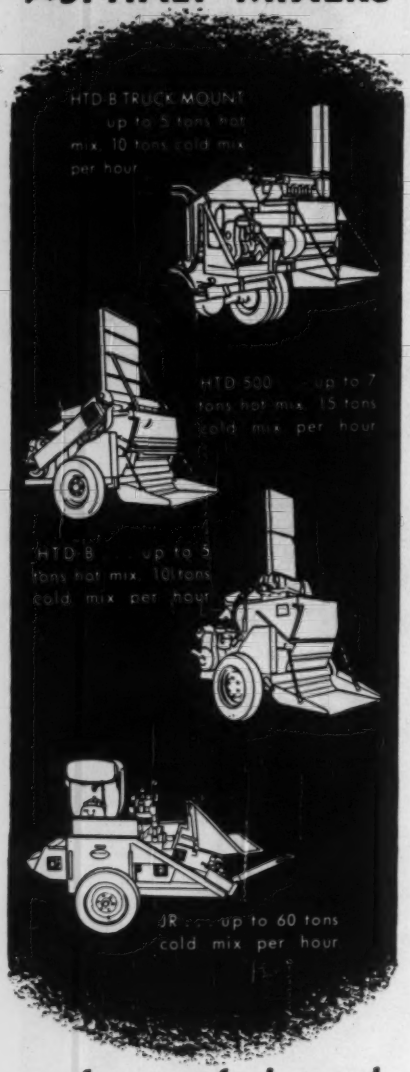
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HTD 500 up to 7 tons hot mix 15 tons cold mix per hour
HTD-B up to 5 tons hot mix 10 tons cold mix per hour
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***K. E. McConnaughay, Lafayette, Ind.***




lb in hardpan and 7,000 lb in permafrost at a 9-in. depth. 6- and 8-in. anchors will have correspondingly higher holding strengths. For example, the 8-in. anchor will hold 11,000 lb in hardpan.

Another method of installing the anchors uses a specially developed tool. The tool, shown in the illustration, weighs 35 lb and is recommended where a larger number of anchors must be installed in a short time.

With the use of a special rod, the anchors can also be installed by impact-type equipment such as a pneumatic air hammer. Driving time with this system is usually less than a minute.

The anchor body is fabricated in either aluminum alloy with steel insert or in one piece malleable iron construction. Four types of anchor line assemblies are available; wire, cable, chain and solid rod.

A 4-in. malleable iron anchor with a cable-type assembly is priced at about $3 with larger sizes priced somewhat higher. The special driving tool sells for $30. Laconia Malleable Iron Co., Laconia, N. H.

## Skyhook Lessens Fatigue Of Men Climbing to Heights

A new safety elevator known as the Skyhook is said to allow quicker ascents, fewer stops for rest and eliminate most of the dangers of falling and fatigue for men climbing considerable heights. Used by oil drilling derrickmen, the device has potential usefulness for smokestack and tower erectors, dam builders, etc. where men must climb heights.

The Skyhook operates in this manner. A long cable runs through a sheave attached to the structure at the head of a ladder; at one end of the cable is a double safety belt which the climber around his waist and seat; on the other end is a steel counterbalance which glides up and down on a guy wire attached to the structure. As the man climbs upward, the counterweight moves down the guy wire, counterbalancing most of the man's weight. The higher he climbs—the lighter he gets, because the weight of the cable passing through overhead pulley is added to the counterbalance side. Dykes, Inc. 1121 Rothwell, Houston 2, Tex.

## Packaged Compressor Is Driven By 125-hp Motor

A 125-hp electric-driven air compressor has been added to the Ingersoll-Rand line of air-cooled, two-stage Type 40 stationary compressors. The new unit is expected to fill the need of contractors for a compressor of this size which is nevertheless transportable from job to job.

The compressor has a 686 cfm capacity operating at 1,180 rpm. Net weight is 4,200 lb and the unit is 63¾ in. long, 49¼ in. wide and 50¾ in. high.

Either constant-speed control or dual control can be furnished. Dual control is available with either automatic or manual selection, permitting operation at constant-speed or automatic start-and-stop, whichever is thought to be more economical. Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.

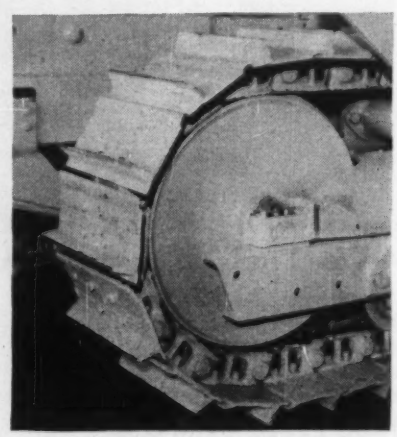
## Operatorless Elevators Need Not Be Voiceless

The Elevoice is a device designed to eliminate confusion for passengers in the transition from attendant operated to automatic elevators. Loudspeakers in each car are connected to one or more master drums on which any

(*Continued on page 50*)

## Disc-Type Idlers Available for D4's

**Large idler groups, which are now offered as attachments for the D4 tractor, will be changed to the fabricated disc type. The groups will continue to be offered as attachments. The fabricated idlers are wider than the cast idlers and have hardened rims to give longer service life. Tangling of branches, mud packing, etc. is avoided with the elimination of spokes. Price has not been increased on the attachment. The standard D4 will include the smaller idler groups of the spoke type. Special D4 arrangements which include the large idler groups will be changed to include the large idler group of the disc type. Price will not be increased. Caterpillar Tractor Co., Peoria, Ill.**



# 20 out of 22 crawlers drive through torque converters

***. . . and they're all Twin Disc!***

Of the 22 crawler tractors working on the first section of the Indiana Toll Road now under construction—*20 are equipped with Twin Disc Torque Converter Drive!*

Why this top-heavy proportion of Torque Converter crawlers? Let's ask H. T. Lattimore, general superintendent for Suber & Co., of Whitmire, S. C., the contractor with the earth-moving contract for the first 12-mile stretch.

"We prefer Torque Converter crawlers," says Mr. Lattimore, "because they give us more usable power, and more power *means more work done every day.* The Torque Converters cut out engine lugging, cut down on shifting and clutching and make it a lot easier for our operators to match tractor power to the load. Operators move more dirt and are less tired after a full day's work on a tractor with Torque Converter Drive."

Throughout the construction industry, more and more contractors are carefully checking the performance of Torque Converter-equipped tractors . . . and arriving at the same conclusions! That's why *all three* of the "Big 3"—Allis-Chalmers, Caterpillar and International, manufacturers of the most powerful crawler tractors now available—have standardized on Twin Disc for their Torque Converter Drive models!

Be sure there is a Torque Converter Drive in the next tractor you order. Check with your dealer today for complete information on Torque Converter Drive—and the tremendous increase in *drawbar pull* it will give your tractors.

Photo—Excavating on the Indiana Toll Road, Suber & Co. is working ten HD-20, six new HD-21, one HD-15AC Allis-Chalmers and three TD-24TC International crawlers—a total of 20 out of their 22 tractors on the job *driving through Twin Disc Torque Converters!*

TWIN DISC

**TWIN DISC**
**Torque Converters**

**TWIN DISC CLUTCH COMPANY, Racine, Wisconsin (Hydralic Division) Rockford, Illinois**

# HURRICANE TESTS PROVE...

This 1200-horsepower aircraft engine and propeller were placed close to a test building in which the Truscon Stainless Steel Reversible Window had been installed. Plastic gaskets between stainless steel frame and sash withstood blasts of wind-driven water at velocities as high as 145 mph. At test's conclusion, no trace of moisture was found inside the window. Test conducted by University of Miami, Housing Research Laboratory, Miami, Florida, April 1, 1955.

Examining Truscon Steel Division's "window of tomorrow" at the site of the University of Miami's Hurricane Test are (left to right) Arvin B. Shaw, III, Harrison & Abramovitz; M. Herschel Parsons, Turner Construction Company; John J. Healy, Harrison & Abramovitz; John W. Galbreath, head of the Galbreath Corporation, Co-owner of the Socony Mobil Building; and C. B. McGehee, Truscon General Manager of Sales.

**TRUSCON STEEL DIVISION**
**REPUBLIC STEEL CORPORATION**
**3114 Albert Street**
**Youngstown 1, Ohio**

REPUBLIC STEEL

Please send me complete data and specifications describing the Stainless Steel Reversible Window.

Name_____ Title_____

Firm_____

Address_____

City_____ Zone____ State_____

K-8711-A

# TRUSCON Stainless Steel Reversible Window positively leakproof in 145 m.p.h. gusts

Not one drop of moisture seeped through Truscon's new stainless steel reversible window exposed to hurricane gusts of wind and water!

In tests conducted by the University of Miami Housing Research Bureau, a 100 mph. blast of wind and water was hurled directly at the window from close range. Hurricane gust velocities ran as high as 145 mph. The thirty-gallon-per-minute deluge of water was equivalent to a normal 4-inch rainfall. No leakage.

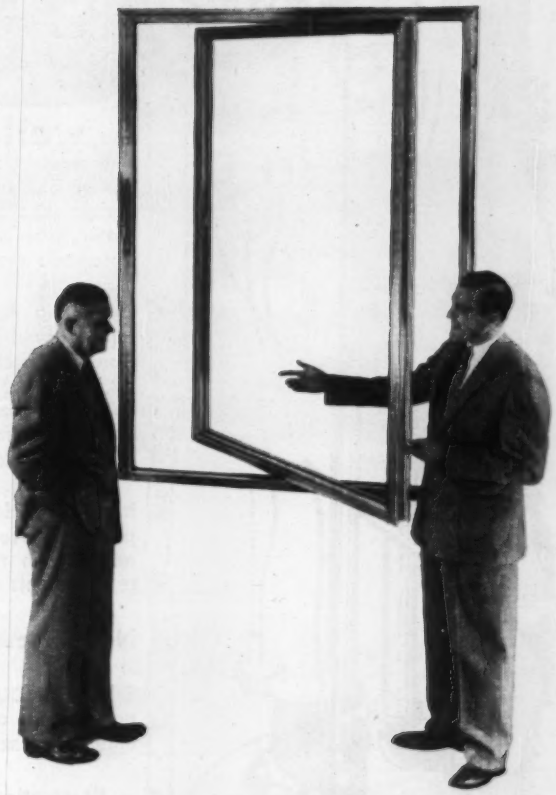
This ordeal confirmed results of previous tests given by Pittsburgh Testing Laboratories in which air infiltration was negligible and there was no water leakage.

Consider the importance of performance like this in view of the shifting nature of hurricane danger zones. The records of the three violent hurricanes which swept New York City last year prompted the United States Weather Bureau to warn that the metropolitan area no longer can be considered immune.

Of even greater interest to building owners and tenants is the ease with which this free-swinging, fully reversible window can be washed from *inside* to cut cleaning costs by 50%. Both sides offer equal weathering characteristics.

In the new window's initial application—in the monumental Socony Mobil building—engineers estimate that its tight seal, which prevents leakage of heated or cooled air, will provide annual savings of $3.54 per opening as compared with conventional frames and sash. More savings!

Such positive air and watertight seal is provided by a unique double gasketing of polyvinyl chloride with a combination tube and squeegee weathering section. Gaskets are precisely fitted between the stainless steel vent and frame, completely fill the opening.



In addition, this new Truscon Window is manufactured from Republic ENDURO Stainless Steel, AISI Type 302. ENDURO offers almost complete immunity to weather effects. It resists rust and corrosion. It is easy to clean with soap and water, will require no costly steam cleaning, never needs painting. It offers tremendous strength in thin sections that trim bulk and save weight. It keeps its good looks for life. You can't wear ENDURO out.

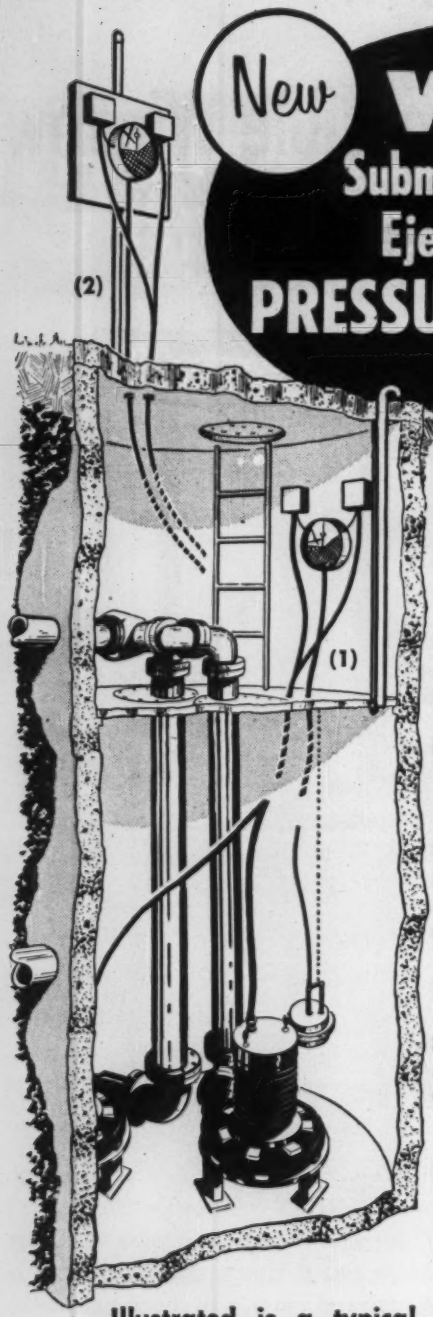
Here is truly the permanent window. The easiest-to-maintain window. The best weathering window ever produced. And, it is in mass production now! Get your file of facts and specifications. Send coupon at left.

**REPUBLIC STEEL**

*World's Widest Range of Standard Steels and Steel Products*

New **weil**

**Submersible Sewage Ejectors with PRESSURE CONTROL**




The **weil** NON-CLOG Screenless Submersible Sewage Pump with the BLADELESS Impeller — the pump that pumps ALL SEWAGE and drainage water, even rags — now furnished with automatic pressure type control.

Operating on the liquid level, works equally well in deep or shallow pits. Control switches may be installed in pit, on a pole outside of pit, or in a building a considerable distance away. This feature materially reduces overall cost of installation.

It will provide for control for various pumping levels, and may be quickly adjusted in the field when pumping requirements of installation change.

**Not Affected by Oil or Grease**

IDEAL FOR DUPLEX PUMPS—Will alternate pumps and provide for standby emergency service.

**Illustration shows controls mounted (1) in pit, and (2) on pole outside of pit demonstrating the versatility of this type of control.**

**Illustrated is a typical LIFT STATION or HIGHWAY UNDERPASS DRAINAGE STATION. No pump house is required.**

**Submersible Sewage Ejectors are available with:**

**Capacities from 35 to 2000 GPM**
**Heads to 70 feet**
**Discharges 3", 4", 5" and 6"**
**Powered with ½ to 20 H.P. Motors**

*Send for*

NEW Bulletin SE 860 C with plans and specifications for lift stations, highway underpass pumping installations and many other applications requiring economical and dependable waste pumping.

**weil PUMP CO.**

**1528 N. FREMONT ST. • CHICAGO 22**


## NEW PRODUCTS

**RECORDED MESSAGES are carried on master drums rotating every three seconds.**

number of messages are electronically recorded.

The drums which are usually located in the machinery room rotate every three seconds and deliver a message appropriate to each car's movements. Messages would include the calling of floor and terminal stops, warnings to passengers obstructing the car's departure and others appropriate to normal or unusual situations in each car.

Volume of the announcements can be adjusted to meet individual building needs—low volume for hospitals, high for factories, etc. The Elevoice will be installed as optional equipment.

A safety device has also been developed which prevents closing of the doors on a passenger. A proximity device mounted on the edge of the car doors, it detects the presence of any part of the human body so that the doors reverse before they can even touch the passenger. OTIS ELEVATOR CO., 229 E. SIXTH ST., CINCINNATI 2, OHIO.

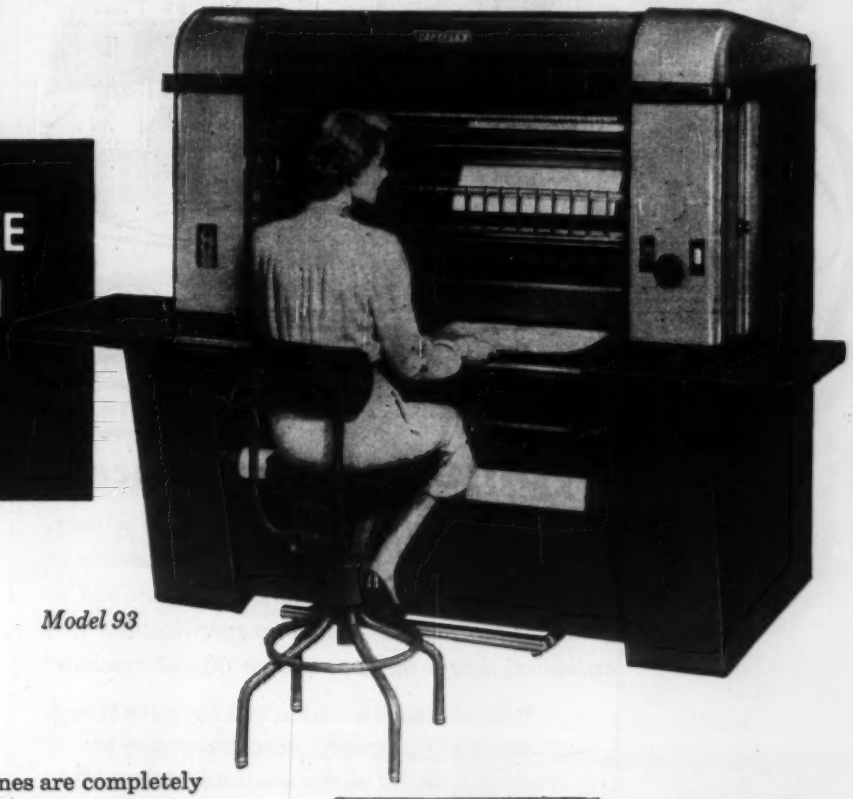
### Five-Drawer Metal Plan File With Plastic Dust Covers

A new line of metal five-drawer plan files features a hinged dust cover arrangement. The dust cover is made of plastic-coated cotton cloth attached to tilting arms which will stay in place when raised. The operator can use both hands when removing or inserting drawings or blueprints in the drawer.

Furniture quality steel is used in the construction of the files which are finished with gray enamel. The drawers operate on specially designed ball bearing rollers; positive locking keeps drawers in position when in use. MAYLINE CO., INC., 619-F NORTH COMMERCE ST., SHEBOYGAN, WIS.

# *A Big Reason Why More Firms Are Switching to Copyflex . . .*

**PROBLEM-FREE INSTALLATION and OPERATION!**



*Model 93*

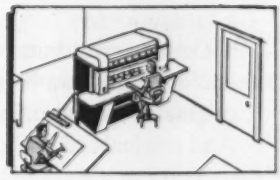
Because Copyflex reproduction machines are completely free from fumes and odors, they require no exhaust venting . . . they need no plumbing or auxiliary equipment, no installation other than an electrical connection.

Because they are absolutely clean, quiet, and odorless, they can be operated *anywhere* without annoyance to personnel in the vicinity.

That's why the people who handle reproduction, and know it best, prefer Copyflex. It's a big reason why more and more firms are switching to Copyflex!

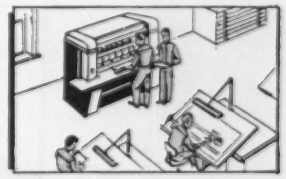
Why settle for less when it costs no more to own the one machine that offers you *all* the advantages of diazotype, positive black-on-white reproduction—speed . . . economy . . . quality—*plus* trouble-free installation and ideal operating conditions!

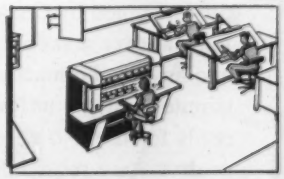
You'll find that Bruning also gives you the widest selection of reproduction materials available anywhere. Mail coupon for information on models and prices—today!



**PUT IT HERE . . .**
Near an inside wall—no plumbing, no ducts!

**PUT IT THERE . . .**
Near an outside wall—no vents in walls, windows!





**PUT IT ANYWHERE!**
Needs only an electrical connection for operation!

**BRUNING Copyflex**

Best Process! Best Machines! Best Selection of Materials!

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## Whaddyamean...print tracer?

*Running down who has what prints, where, for how long, and who is supposed to get them next... is a headache in any office. And waiting while prints are passed around to suppliers and contractors—holds up specifications and estimates, delays the job. Get an Ozalid machine!*

With an Ozalid machine, you can have enough prints quickly, cheaply. An extra set can be made in a matter of minutes, for less than 1½¢ a square foot.

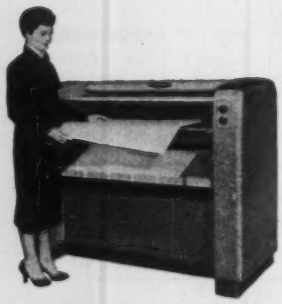
Ozalid saves draftsmen's time, too. Changes and additions can be made on Ozalid duplicate originals, without doing over basic drawings. And originals can be kept in the files.

You can also use Ozalid to copy reports, material lists, specifications, instruction sheets, letters, invoices—avoid manual copying and typing, cut clerical costs.

ANYTHING drawn, typed, printed or written on any translucent (lets light through) material can be copied by Ozalid. Lay the translucent original over a sheet of sensitized paper. Feed into any Ozalid machine—and in less than a minute, you get an exact copy, delivered dry, ready for use. No negatives, developing tanks, or dryers are required.

Ask the nearest Ozalid distributor *(see phone book)* for a demonstration. Or write 149 Ozaway, Johnson City, N. Y. In Canada, Hughes Owens Co., Ltd., Montreal.

OZALID—A Division of General Aniline & Film Corporation... *From Research to Reality*



*New* STREAMLINER *400... prints on sheets or continuous roll stock up to 42" wide, as fast as 24' per minute... improved design, superlative performance, best value among lower priced whiteprint machines.*

# OZALID

## MEN AND JOBS

Col. J. R. Crume

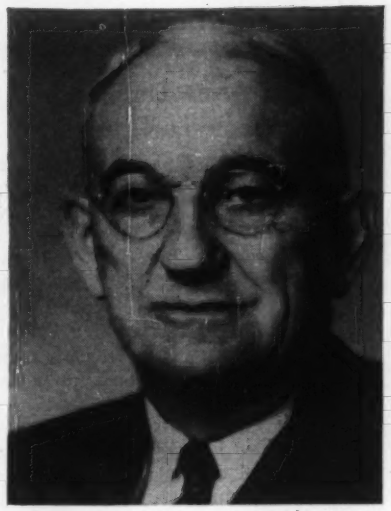
### Former Army Engineer Given Military Construction Post

Col. John R. Crume has been appointed officer-in-charge of the Air Force Installations Representatives Office for the North Atlantic Region, with headquarters in New York City. In his new assignment, he will monitor all Air Force construction in the coastal states from New York through Virginia, and in Newfoundland, Canada, Greenland, Iceland, the Azores and Bermuda.

At the present time there are over 4,000 construction projects under way at Air Force stations within the jurisdiction of the North Atlantic Region. Included among these is the big radar net now being constructed along the Arctic Circle.

A civil engineering graduate of the University of California and a graduate of West Point, Col. Crume served with the Corps of Engineers, in both its military and civilian programs, and taught at West Point before his transfer to the Air Force in 1947.

After the war, during which he served in the Southwest Pacific, Col. Crume was assigned to the Logistics Group of the War Department General Staff. His subsequent duty has included service as staff engineer for the Caribbean Air Command and staff installations engineer in San Francisco for the Western Air Defense Force. For the last four years, Col. Crume has been stationed at Western Reserve University in Cleveland as professor of air science.



A. W. Dann

## Civil Engineer Winds Up Long Career With Dravo

A. W. Dann, executive vice president of Dravo Corporation, Pittsburgh, Pa., has retired after 42 years with Dravo.

A civil engineering graduate of Cornell University, Dann served with the Corps of Engineers before joining the Dravo Contracting Company, forerunner of the present corporation, in 1913. He was elected a vice president and a director when the present company was formed in 1930 and became its executive vice president.

Dann is a life member of the ASCE and has been active in many organizations identified with river transportation and construction.

William E. Clark, former vice president and general manager of the firm's Engineering Works Division, succeeds him.

## San Francisco Engineers Form a New Partnership

San Francisco structural engineers William H. Ellison and G. A. Sedgwick have formed a partnership under the name of Ellison and Sedgwick.

Ellison has been in practice for many years and was formerly associated with the late Stanley King under the firm name of Ellison and King. Among the structures designed by his former firm are the Downtown Center and Lick Garages in San Francisco.

Sedgwick was formerly associated with W. P. Day Associates, San Francisco architect-engineers, and was responsible for the structural design of the new San Francisco Airport Terminal Building. He is now president of the Structural Engineers Association of California.

(*Men and Jobs continued on page 54*)

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**Grating for Every Need**
**A CATALOG**
**for every Grating**
***Write for your***
**Copy NOW!**

**STEEL**
*for the 1001 applications where safety and strength come first. Kerrigan Steel Grating is BONDERIZED for corrosion resistance and extra years of life.*

**STAINLESS and MONEL**
*non-magnetic steel for the chemical, oil and packing industries . . . for ANY installation where high resistance to heat, acids, chemicals, and corrosion is needed.*

***TRULY . . .***
**In both size and type, there is a Kerrigan Weldforged grating for every need. Let our new catalogs prove it to you. Send for the one you think best answers your need (or ask for ALL FOUR if you wish). We will also be glad to send you a desk-size grating sample. Write Kerrigan Iron Works, Inc., General Sales Office, 274 Madison Ave., New York City.**

**RIVETED STEEL**
*where it is desired to match existing grating.*

**ALUMINUM**
*spark-proof for those whose need is strength AND lightness. Extra safe and strong. Allowable fiber stress 15,000 psi. Modulus of elasticity 10,000,000 psi.*

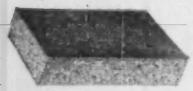
KERRIGAN GRATING
CUSTOM-MADE FOR YOUR JOB AND SAFE—IT'S

# SERVICISED PRODUCTS for CONCRETE STRUCTURES

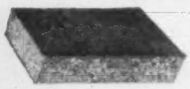
Dams and Floodwalls, Sewage Treatment and Water Filtration Plants

In general these products are specially designed for structures which control or contain water. Preformed joint fillers used in conjunction with rubber waterstop fill and seal expansion or construction joints so effectively that considerable hydrostatic pressure on one surface of the structure is not allowed to come through the joint.

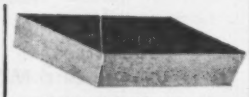
## EXPANSION JOINT FILLERS



**CORK** Premolded Joint Filler has a high recovery factor (95%) after compression — is non-extruding and inconspicuous in mass concrete structures. Keeps the joint filled at all times.



**SELF-EXPANDING CORK** is specially treated to expand to 150% of original thickness to insure positive joint filling where concrete shrinkage problems are present. Non-extruding . . . and resilient.

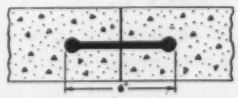


**SPONGE RUBBER CEMENTONE** Gray color blends with concrete. Fully resilient, non-extruding. Uniform thickness and density. Supplied in various degrees of compressibility to meet your requirements.

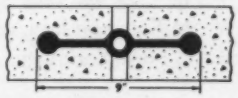
## RUBBER WATERSTOP

Servicised Waterstop is flexible and elastic, with a very high tensile strength — easy to install and once in place withstands contraction, expansion and shearing movement to insure a positive permanent watertight seal against hydrostatic water pressure.

Two types — Flat Dumbbell and Hollow Bulb. Both types meet all standard engineering specifications. Waterstop also available in fabricated ell's and tee's.



Flat Dumbbell Type



Hollow Bulb Type

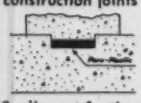
## NEW! SPLIT DUMBBELL TYPE

Servicised Split Type Waterstop spread open and nailed to inside of bulkhead. This eliminates slotting — saves time and labor.

Saves time, labor — eliminates split bulkheading. One half of waterstop width is split to permit fastening to bulkhead to form a "T" (see illustration). After pour, bulkhead is stripped, and divided section joined by stapling or with rubber cement. Also lower cost field splicing using Servicised Union.

## MOLDED PARA-PLASTIC

Used in keyed construction joints



Sealing at footing.

Bituminous rubber seals keyed contraction or construction joints, in vertical walls. Applied by heating surface. Adheres to concrete to form resilient, moisture-tight seal.

## PARA-LATERAL STRIP

For sealing exterior vertical construction or expansion joints in walls, tunnels, foundations, etc., where joints must be protected against seepage from backfill.

Write for catalog describing the complete Servicised line and the special brochure on Rubber Waterstop. Sent without obligation.

**SERVICISED PRODUCTS CORPORATION**

**6051 WEST 65th STREET • CHICAGO 38, ILLINOIS**




## Retiring Army Engineer To Join Palmer & Baker

Col. Charles T. Tench, district engineer in New Orleans, La., will join Palmer & Baker, consulting engineers of Mobile, Ala., and New Orleans, as assistant to the president. He will assume his new duties after approval of his application for retirement from the Corps of Engineers.

Stationed in New Orleans since April 1953, Col. Tench previously served on the War Department's general staff and as district engineer in Atlanta, Ga. During the war, he was assigned to Gen. MacArthur's staff in the Pacific and, when the Japanese surrendered, was placed in command of the advance airborne landing at Atsuki Airdrome.

## Men and Jobs Briefs . . .

• **Careers**—The South Carolina State Ports Authority establishes an engineering division headed by **James J. Scott,** civil engineer of Charleston . . . **Hugh C. Faville,** city planner for Manitowoc, Wis., is appointed senior planner at Tacoma, Wash. . . . **L. Walker Brown,** special assignment engineer for the Montana Highway Department, is promoted to secondary roads engineer.

• **Business**—George W. Lathrop & Sons, Inc., Toledo, Ohio, general contractors, names **David S. Morgan** assistant chief engineer . . . **Richard T. Cash,** formerly with the Illinois Division of Highways as district engineer, joins De Leuw, Cather & Co., Chicago engineers . . . **Robert W. Marvin,** general manager of the Engineering Works Division of Dravo Corp., Pittsburgh, becomes a director of the company.

• **Retirements**—**Harry L. Kile,** budget engineer for the California Division of Highways and administrative engineer for the division's Planning Department, after 22 years of service. A pioneer in the forecasting of available amounts of revenue from highway user taxes for highway improvements, he also developed accident analysis techniques that led to the present tabulation system of accident records.

• **Honors**—The North Carolina State Highway Commission presents its D. B. McCrary Award for 1954 to **H. Fred Waller, Jr.,** laboratory supervisor of the commission's bituminous research department, in recognition of his research on bituminous paving mixtures.

# 7,000 ITEMS A KEY TO K&E LEADERSHIP

*Drafting, Reproduction, Surveying,*
*Optical Tooling Equipment and Materials*
*Slide Rules Measuring Tapes*

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# MATERIALS AND LABOR PRICES

**Market quotations on construction materials and wage rates reported monthly by ENR correspondents**
**August Materials, and Labor Prices, will appear in August 4, 1955 issue**

## CEMENT, AGGREGATE, READY-MIXED CONCRETE—F. O. B. CITY

| | PORTLAND CEMENT* Per bbl. C/L lots cash, dis. not deducted | | | SAND AND GRAVEL Per ton, carload lots Gravel, 1½ in. | Gravel, ¾ in. | Sand | CRUSHED STONE Per ton, carload lots 1½ in. | ¾ in. | CRUSHED SLAG Per ton, carload lots, f.o.b. plant 1½ in. | ¾ in. | CONCRETE BLOCK 8 x 8 x 16-in.; truckload del.; per block Sand grav. | Lt. wgt. agg. | CONCRETE Ready Mixed 1:2:4; over. 50 c.y., del. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Paper | Bulk | Mortar | | | | | | | | | | |
| Atlanta | $3.97a | $3.56a | $3.40 | $2.75 | $2.75 | $2.50‡ | $2.14 | $2.24 | $1.45 | $1.65 | $0.18 | $0.195 | $12.25g |
| Baltimore | 4.16a | 3.75a | 3.63 | 2.60‡a | 2.60‡a | 2.00‡a | 2.75‡a | 2.80‡a | 2.65‡a | 2.60‡a | .18 | .18a | 12.15 |
| Birmingham | 3.72 | 2.75e | .... | 2.53n | 2.53n | 2.08n | 2.75 | 2.75 | 1.35 | 1.55 | .165 | .165 | 11.00 |
| Boston | 4.47b | 4.11b | 4.06 | 3.00a | 3.00a | 3.00a | 1.60a | 1.75a | ..... | ..... | .23 | .265a | 13.00k |
| Chicago | 3.73a | 3.32a | 3.35 | 3.60‡b | 3.60‡b | 3.75‡b | 3.50‡b | 3.50‡b | 2.25‡ | 2.25‡ | .23 | .23b | 12.50 |
| Cincinnati | 3.95c | 3.55c | 3.73 | 2.19‡c | 2.24‡c | 2.24‡c | 2.54‡c | 2.54‡c | ..... | ..... | .18 | .225a | 11.60 |
| Cleveland | N. A. in C. L. | | | 3.34e | .... | 2.05e/ | 1.85/ | 1.65 | 4.10‡a | 4.10‡a | 3.35‡ | 3.15‡ | ..... | .22 | 15.05 |
| Dallas | 3.15a | 2.85a | 2.93 | 2.18 | 2.28 | 1.84 | 2.22 | 2.38 | ..... | ..... | .11e | .2675 | 9.40 |
| Denver | 4.24a | 3.94a | 4.24 | 1.85 | 2.00 | 1.20 | ..... | ..... | ..... | ..... | .23 | .255a | 10.50 |
| Detroit | 3.89a | 3.20a | 3.54 | 4.50‡b | 4.50‡b | 4.00‡b | 3.75‡ | 3.75‡ | 4.25‡ | 4.25‡ | .21 | .23a | 12.80 |
| Kansas City | 4.10b | 3.90b | 3.90 | 1.65 | 1.65 | 2.00‡a | 2.00‡a | 2.00‡a | ..... | ..... | .20a | .24c | 12.75b |
| Los Angeles | 4.92ch | 4.46ch | 5.40 | 2.31a | 2.51a | 2.31a | 2.16a | 2.31a | ..... | ..... | .135/m | .245m | 12.37lh |
| Minneapolis | 4.20a | 3.79a | 3.71 | 2.70‡ag | 2.70‡ag | 1.60‡ag | 3.25‡ag | 3.25‡ag | ..... | ..... | .19i | ..... | 12.75/ |
| Montreal | 3.11d | 2.86d | .... | 2.20e | 2.20e | 2.25e | 1.90i | 2.20i | ..... | ..... | .17 | .17a | 10.80eb |
| New Orleans | 3.50a | 3.20a | 3.45 | 2.44 | 2.44 | 2.00 | .... | .... | 1.45 | 1.65 | .275 | ..... | 12.90 |
| New York | 4.26a | 3.85a | 3.63 | 2.85bk* | 2.85bk* | 1.90bk** | 2.70bl | 2.70bl | ..... | ..... | ..... | ..... | 14.65an |
| Philadelphia | 3.73/4.12‡a | 3.42/3.79‡a | 3.58/3.63‡ | 2.85‡*p | 2.85‡*p | 2.35‡** | 2.45‡ | 2.55‡ | 2.00 | 2.35 | .22/.26 | ..... | 13.20de |
| Pittsburgh | 3.75a | 3.56a | 3.75 | 2.40‡ | 2.40‡ | 2.20‡ | 2.60‡ | 2.60‡ | 2.15 | 2.15 | .25d | .31 | 14.00 |
| St. Louis | 3.70/3.93c | 3.25/3.51c | 3.55/3.72 | 3.25am | 3.00am | 2.40/3.00am | 1.60j | 1.70j | 1.50 | 1.50 | .22 | .28ci | 12.90 |
| San Francisco | 3.83c | 3.39c | .... | 2.07 | 2.07 | 2.17 | 2.22 | 2.22 | ..... | ..... | ..... | .28cl | 12.15c |
| Seattle | 4.80a | 3.55a | 5.95h | 3.50‡bm | 3.50‡bm | 3.50‡bm | 4.00‡bm | 4.00‡bm | ..... | ..... | .225i | .315i | 12.30i |
| Toronto | 4.00 | 3.77 | 4.00 | 2.25 | 2.25 | 1.85 | 2.00 | 2.00 | 2.00 | 2.00 | .25 | .35c | 14.95 |

‡ Delivered. * Prices incl. dealers discount except as noted.

CEMENT: *a* Less 10¢ disc, 15 days. *b* Less 2% disc, 15 days. *c* Less 10¢ disc, 10 days. *d* Truckload lots, deliv. 10¢ disc, 20 days. *e* Truckload lots, destination price. *h* LCL.

SAND GRAVEL, STONE & SLAG: *a* Truck lots. *b* Per cu. yd. *c* 5 tons or more. *e* ½". *f* Pea gravel. *g* Less 5% for cash. *h* Less than 5 tons. *i* Sales tax incl. *j* F.o.b. quarry. *k* Barge lots asd. *l* F.o.b. scow Hudson river. *m* Less 2% for cash. *n* F.o.b. cars. *o* 1–3 mi zone. *p* Add 10¢ for ea. add'l mi zone.
* 3.05 eff 7/21 ** 2.00 eff 7/21

CONCRETE BLOCK: *a* Cinder. *b* Waylite. *c* Haydite. *d* Celocrete *e* 5¼ x 8 x 12 in. *f* 8 x 4 x 16. *g* F.o.b. truck at job. *i* Less 2% for cash *l* F.o.b. plant San Rafael. *m* F.o.b. yard

READY MIXED CONCRETE: *a* 5 cu. yds. or over del. Man. *b* 25 cu. yds. or more. *c* 10–100 cy. brackets. *d* 1–3 mi. zone. *e* 2,000 lb comp. *f* 2500 lb. comp. *g* Less 25¢ disc, 15 days. *h* Less 50¢ for cash. *i* 5% off for cash. *j* 2% off for cash. *k* Federal tax included. Add 5% mun. & prov. *l* 1:2½:3. *m* F.o.b. yard. *n* Plus escalator clause. *o* Add 15¢ for ea. add'l 3-mi zone.

CASH DISCOUNTS CEMENT to Contractors: Truck delivery, 2% for cash on 10th of month; on carload deliveries, no trucking, same as dealer cash discount 10¢ per bbl. for payment within 15 days of date of invoice. Subject discount 10¢ per bbl. 20 days in Montreal.

### CURRENT MAXIMUM PRICES AT CEMENT MILLS

Charge for bags not included. For paper bags add 40¢ per bbl., not refundable.

| | Bulk | | Bulk | | Bulk | | Bulk | | Bulk |
|---|---|---|---|---|---|---|---|---|---|
| Richard City, Tenn. | $2.90† | Buffington, Ind. | $2.85† | Steelton, Minn. | $2.95† | Muskegon, Mich. | $3.00† | Toledo, O. | $2.90† |
| Clinchfield, Ga. | 2.90† | Independence, Kan. | 2.80† | Leeds, Ala. | 2.75† | Saginaw, Mich. | 3.00† | Milwaukee, Wis. | 3.05† |
| Kingsport, Tenn. | 2.90† | Hannibal, Mo. | 2.85† | Duluth, Minn. | 2.95† | Wyandotte, Mich. | 3.00† | Green Bay, Wis. | 3.05† |
| West Des Moines, Iowa | 2.95† | Northampton, Pa. | 2.90† | Hudson, N. Y. | 2.75† | Buffalo, N. Y. | 3.00† | Ironton, O. | 2.90† |
| Nazareth, Pa. | 2.90† | Universal, Pa. | 2.95† | Alpena, Mich. | 2.90† | Oswego, N. Y. | 3.15† | Montreal City | 2.55 |
| Bath, Pa. | 2.90† | Waco, Tex. (+ 10¢ tax) | 2.85† | Detroit, Mich. | 3.00† | Cleveland, O. | 2.95† | W. Winfield, Pa. | 3.00† |

† *Prices to hold for third quarter of* 1955.

## PAVING BRICK, BLOCK, ASPHALT, ROAD OILS—F. O. B. CITY

| | PAVING BRICK AND BLOCK Granite Per M lots of 50,000 4x4x8 in. | Brick per M 3x4x8½ in. carload lots | Wood per sq. yd. 3½ in. 16-lb. treat | PAVING ASPHALT Per ton, less than 80 penetration Tank car | Drums | ASPHALT BINDERS—FLUXES Per gal., 80–300 penetration Tank car | Drums | CUTBACK ASPHALT MC Per ton Tank car | Drums | ROAD OIL Per gal. Tank car | ASPHALT EMULSION RSI Per gal. Tank car | Drums |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Atlanta | ..... | ..... | ..... | $26.00 | $33.25 | $0.115 | $0.23 | $0.125Fw | $0.27Fw | $0.15 | $0.15 | $0.25 |
| Baltimore | 150.00‡ | 75.00‡ | ..... | 21.00i | .... | .085i | 0.175i | .09iwH | .18iwH | .09i | .095i | 0.185i |
| Birmingham | ..... | 57.50i | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Boston | ..... | ..... | ..... | 22.00a | 23.00a | 22.00av | 22.00av | .09vF | ..... | .10a | .145aq | .22aq |
| Chicago | 155.00‡ | 85.00‡b | 3.50/3.55‡f | 19.85b ] | 29.85b | 18.85bv | 28.85bv | .094bwH | .1740bwH | .0725b | ..... | ..... |
| Cincinnati | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Cleveland | 200.00 | 73.00d | 5.03g | 23.00A | ..... | 23.00A | ..... | .1025AwF | ..... | ..... | .1025Aq | .15Aq |
| Dallas | e | 40.00 | e | 24.05 | 43.09 | .1016 | .2103 | 28.91 | 50.44 | .098 | .1087 | .1960 |
| Denver | ..... | 50.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Detroit | ..... | 104.00 | ..... | 27.21 | ..... | 27.21v | ..... | .1188wJ | ..... | .0966 | ..... | .211 |
| Kansas City | e | e | e | 15.00cl | ..... | 17.50e | ..... | .07ewJ | ..... | .055c | 0.11 | ..... |
| Los Angeles | e | ..... | e | 16.00dmz | ..... | 16.00dvz | ..... | 18.00dzK | ..... | 17.00dv | .0825j | .1725j |
| Minneapolis | ..... | ..... | 2.97h | 23.70 | ..... | 23.70 | ..... | 0.10w | ..... | 0.10 | .1025 | ..... |
| Montreal | e | e | e | 27.00n | 39.60n | .135n | .198n | 16.50nuH | 20.90nuH | .132n | .197ns | .289ns |
| New Orleans | ..... | ..... | ..... | 17.50e | ....o | 17.50ew | ....o | .085ew | ....o | .085B | .085BL | ..... |
| New York | ..... | ..... | 2.75/ | 23.89qCD | 44.32qD | 22.89vtCD | 43.57vtD | .1023wCDF | .1889wDF | ..... | .1023CD | .1918M |
| Philadelphia | 175.00 | 110.00 | 4.06 | 22.00 | ..... | ..... | ..... | .09uF | ..... | ..... | ..... | ..... |
| Pittsburgh | 165.00 | 48.00 | 4.60 | 27.00 | 38.00 | .10 | .21 | 27.00H | 40.00H | .098 | .11 | .224 |
| St. Louis | ..... | ..... | ..... | 18.76f | ..... | .1704 | ..... | .0863wH | ..... | 0.1575 | .10 | ..... |
| San Francisco | ..... | 67.50e | ..... | 17.50q | 33.00qp | 17.50qkv | 33.00qkv | 20.00qN | 37.50qN | 18.75v | .085y | ..... |
| Seattle | ..... | ..... | ..... | 17.50h | 38.00h | 17.25hv | ..... | 24.50K | ..... | 19.75hv | .085h | .095w |
| Toronto | ..... | ..... | 4.03 | 23.80 | 46.67 | 0.19 | 0.24 | 0.20w | 0.25w | 0.17 | 0.20 | .24 |

‡ Delivered.

PAVING BRICK & BLOCK: *a* CL. *b* 3 x 4 x 8. *c* 2¼ x 8¼ x 4. *d* LCL, truck deliveries. *e* Not used. *f* 2" interior 6¢ treat. *g* 3" *h* 2" tr; 8¢ 3¢ treat. *i* 3 x 3⅝ x 8¼. *j* 2½", 6lb. tr.

ASPHALTS: *a* Price at plant, Everett, Mass. *b* F.o.b. refinery Lockport, Ill. *c* F.o.b. Sugar Creek, Mo. *d* F.o.b. refinery, El Segunda. *e* F.o.b. Baton Rouge. *f* F.o.b. Wood River or Roxana, Ill. *g* F.o.b. Richmond, Calif. *h* F.o.b. Martines. *i* F.o.b. refinery, Baltimore. *j* F.o.b. refinery, Inglewood, Calif. *k* 50–110 penetr. *l* Less than 100 penetr. *m* 40/80 penetr. *n* Tax incl. *o* Drums not avail. Shipped in steel bbl. *q* 40/85 penetr. *r* In customer's drums. *s* Shipped in drums, per drum. *t* 85/200 penetr. *u* Per 100 gal. *v* Per ton. *w* Per gal. *x* Also tank trucks *y* F.o.b. Oakland. *A* F.o.b. refinery, Cleveland. *B* F.o.b. Destrehan, La. *C* Bulk. *D* Prices based on transporting to Manhattan via truck. *E* RC. *F* Also RC. *G* Also MS, SS. *H* RC 0-5 incl. *I* MC 4. *J* MC, RC .0675. *K* MC 3, 4 & 5. *L* MS. *M* MC 1-5, RC 1-5, .089. *N* MC 3. *P* Fob refinery Savannah: $0.09/gal., tank cars; $0.20/gal., drums.

THE NEW BEAUTY OF CONCRETE MASONRY

Over FIVE MILLION 8-inch (or equivalent) Vibrapac Block units were used in New York's modern Riverton Apartments (Starrett Bros. & Eken, Inc., builders). No multiple dwelling structure is too big . . . no single home too small . . . to enjoy the incomparable benefits of Vibrapac Block.

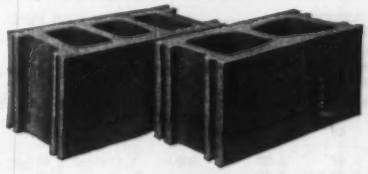
# Many more modern housing-units to cost less by using *permanently beautiful* concrete masonry!

Economy alone would not account for the marked trend toward Vibrapac Block. Added to many other advantages, however, the economy factor carries a lot of weight with everyone aiming at good building practice. True structural economy involves not only *initial cost* but also years of *minimum maintenance costs*. The "bonuses" of concrete masonry are many! ★

"What profiteth a man to build his house upon the sands" of economy, only to face excessive maintenance-costs later? Security against deterioration is all-important.

Since most men have to work the better part of their lifetime to acquire modern shelter, it's very vital to build for *permanent* beauty and decades of comfortable convenience. Modern concrete masonry provides many of the answers to problems of long-service shelter.

Whether plans call for a single family home, or a multiple dwelling structure, concrete masonry is practical.



★"Dense aggregate" Vibrapac block for exteriors . . . light weight aggregate Vibrapac block for interiors . . . pleasing color tones and textures . . . "built-in" insulation advantages . . . sound-absorbing qualities . . . permanent protection from termites and rodents and from damp-rot or deterioration by weather . . . these are some of the many practical Vibrapac block "bonuses."

Initial cost of Vibrapac Block construction is low. Upkeep stays at a low minimum. Architectural beauty is longer-lived. Dollar-wise, security-wise, comfort-wise, it's best to build with Vibrapac Block . . . for both exteriors and interiors.

## *Permanent beauty* at low cost!

Less time required for erection . . . reasonable initial cost . . . modular sizes that "make everything fit," thus simplifying installation of door and window jambs and equipment . . . varieties of color impregnations and textures in Vibrapac Block itself . . . and other unique advantages . . . all add up to "more for the money" in modern housing and other structures. Helpful booklet gladly sent on request. BESSER COMPANY, Box 181, Alpena, Michigan, U. S. A.

A 8272-1PA

## IRON AND STEEL PRODUCTS—PER 100 LBS. BASE MILL PRICES

| | STRUCT* SHAPES— | PLATE* CARBON STEEL | REINF* BARS billet | RIVETS* ½-in. structural | SHEET* PILING Base | STEEL RAILS*— Per Net Ton Standard | Light | TRACK SUPPLIES— Angle* Bars | Std* Spikes | Tie* Plates | Track* Bolts |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Birmingham Area | $4.25 | $4.225 | $4.30 | $9.25 | .... | $89.00 | $107.00 | $5.425 | $7.30 | $5.275 | .... |
| Chicago Area | 4.25 | 4.225 | 4.30 | 9.25 | $5.075 | 89.00 | 107.00 | 5.425 | 7.30 | 5.275 | .... |
| Pittsburgh Area | 4.25 | 4.225 | 4.30 | 9.25 | 5.075 | 89.00 | 107.00 | 5.425 | 7.30 | 5.275 | $11.50 |
| Buffalo Area | 4.25 | 4.225 | 4.30 | 9.25 | 5.075 | 89.00 | 107.00 | 5.425 | 7.30 | 5.275 | 11.50 |
| Cleveland | .... | .... | 4.30 | 9.25 | 5.075 | ..... | ..... | .... | .... | .... | 11.50 |
| Youngstown Area | .... | .... | 4.30 | .... | .... | ..... | ..... | .... | 7.30 | .... | .... |
| Geneva | 4.25 | 4.225 | .... | .... | .... | ..... | ..... | .... | .... | .... | .... |
| Los Angeles | .... | .... | .... | .... | 5.075 | ..... | ..... | .... | 7.30 | .... | .... |
| Pueblo | 4.30 | 4.70 | 4.75 | .... | .... | ..... | 95.00 | 5.425 | 7.30 | 5.275 | 11.50 |

* Increase expected in July.

## IRON AND STEEL PRODUCTS—F. O. B. WAREHOUSE, PER 100 LBS., BASE PRICE

| | STRUCTURAL SHAPES— Per 100 lb. base price | REINFORCING BARS— Per 100 lb., base price: 5 tons to carload lot New billet | Rail steel | EXPANDED METAL LATH‡— Per 100 sq. yd., carload lots Std. diamond mesh, 3.4 lb. | Std. ribbed 3.4 lb. | WELDED FABRIC REINFORCING— Per 100 sq. ft., carload lots fob mill: 4 × 16 in., No. 8 & 10 wire— Joliet, Ill., Donora, Pa., Monessen, Pa. | 4 × 12 in., No. 8 & 12 wire— Joliet, Ill., Donora, Pa., Monessen, Pa. | 8 × 8 in., No. 8 & 8 wire— Joliet, Ill., Donora, Pa., Monessen, Pa. |
|---|---|---|---|---|---|---|---|---|
| Atlanta | $7.08 | $7.22 | $7.22 | $38.00‡ | $42.00‡ | | | |
| Baltimore | 7.02 | 7.06f | .... | 42.00 | 45.00 | | | |
| Birmingham | 6.65 | 6.50t | 6.50t | 51.00v | 57.00v | | | |
| Boston | 7.49s | 7.37 | 7.37 | 42.00 | 46.00 | | | |
| Chicago | 6.69 | 5.78gu | 5.78gu | 46.00‡ | 56.00‡ | | | |
| Cincinnati | 7.06gh | 7.06rv | .... | 39.00mn | 43.00mn | | | |
| Cleveland** | 7.02 | 5.76e | .... | 39.00‡ | 43.00‡ | | | |
| Dallas | 9.05 | 7.25 | 7.25 | 49.00 | 52.00 | | | |
| Denver | 8.15 | 7.20c | .... | 48.00v | 63.00vw | | | |
| Detroit | 7.16 | 6.50w | .... | 50.50 | 60.50 | | | |
| Kansas City** | 7.36u | 7.18 | .... | 43.50 | 47.50 | | | |
| Los Angeles | 7.55fd | 7.05 | .... | 52.00 | 58.00 | | | |
| Minneapolis** | 7.05d | 7.68b | 7.68b | 37.00 | 41.00 | | | |
| Montreal | 7.50–8.00fC/8.50–9.20d | 6.65i | 6.65i | 46.00h | 51.00h | | | |
| New Orleans | .... | 6.20akz | .... | 66.00 | 60.00 | | | |
| New York** | 7.48 | 6.85yaa | 6.85yaa | 42.00ww | 48.00ww | | | |
| Philadelphia | 6.42 | 6.67 | .... | 38.00‡ | 42.00‡ | | | |
| Pittsburgh | 6.69 | 6.92x | 6.55 | 37.60 | 39.60 | | | |
| St. Louis | 7.09v | 6.30c | 6.30c | 55.00l | 56.00l | | | |
| San Francisco | 7.50 | 6.85f | .... | 41.75 | 49.50 | | | |
| Seattle | 5.00e | 6.55cj | .... | 51.00ww | 57.00ww | | | |
| Toronto | 8.00* | 6.55 | 6.55 | 53.50n | 66.50n | | | |

Quantity extras, per cwt: under 100 ℔, +$6; 100–399 ℔, +$3; 400–999 ℔, +1.25; 1000–1999 ℔, base price; 2000–4999 ℔, + 30¢; 5000–9999 ℔, + 10¢; 10,000–19,999 ℔, — 30¢; 20,000–29,999 ℔, — 50¢; 30,000 ℔ and up, — 70¢

EXTRAS, per cwt—*Quantity: less than 700 ℔, +10¢; 700–1499 ℔, +25¢; 1500–7999 ℔, +80¢; +50¢ but not over $4500; 20–200 tons, +60¢ but not over $2000; 5–20 tons, +70¢ but not over $240; under 5 tons, +85¢ but not over $70 *Design only: +60¢ *Sizes: #2 +$2.20; #3 +$1.10; #4 +80¢; #5 +62.5¢; #6, #7 +45¢; #8, #9, #10 +30¢ *Bending: heavy, +80¢; light, +$2 (except in New York City and surrounding metropolitan area where bending must be done on the job) *Engineering (detailing and placing from design by others): over 500 tons, +45¢; 200–500 tons,

‡ Delivered *a 2000–9999 ℔ *b 10,000–15,999 ℔, fob city *c 20 tons or over *d 10,000–19,999 ℔ *e fob plant *f incl. delivering in free zone *g CL *h list price; dominion tax exempt; add provincial and municipal taxes *i add dominion, provincial and municipal sales taxes *j intermediate and hard grade *k fob city *l delivered; contractor to do unloading *m copper alloy *n LCL *o asphalt coated *p del. of 500 sq. yd. or more *q 4 ℔ per sq. yd. *r 2% off for cash *s 2,000–4,999 ℔ *t add 15¢ del. *u add 6.25¢ switch *v incl 15¢ del. *x add 5¢ switch *y add 30¢ del. *z add 10¢ del. *aa Prices beginning Aug. 1 based on Morrisville, Pa.; previously based on Sparrow Pt., Md. Decrease in freight costs due to switch in mill base offset mill price rise in July '54. ♦A American made. ♦C Canadian made. † Number system replaces inch system of classifying bar sizes. New system is based on number of eighth inches in diameter of bar. ♦* Aver. of Canadian & American. ** Increase expected in July.

## PLUMBING, HEATING, WATER, SEWER AND DRAIN PIPE

| | C. I. PIPE Per net ton f.o.b. 6 in. to 24 in.a | ASBESTOS CEMENT PIPE per lin. ft. f.o.b. city 6" Pr Cl. 150 | 12" Sew Cl. I | VITRIFIED SEWER PIPE Per foot, Delivered ASTM C13-44T std. 8 in. s.s. | std. 12 in. s.s. | 24 in. ds. | 36 in. ds. | CLAY DRAIN TILE ASTM C4-24 Per 1,000 ft., carload lots, f.o.b. 6 in. | 8 in. | CONCRETE SEWER PIPE Per ft., delivered: ASTM C 14-41 12 in. | 24 in. | *WROUGHT STEEL PIPE (Full standard weight) Discount from list; see footnotes | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | 2½ to 6 in. Lap Weld‡ | Galv. | 10.25a | 2.75 | 7.75a | |
| | | | | | | | | | | | | | | Butt Weld‡ Black | 36 | .... | .... | 6.50d | |
| Atlanta | $101.00 | $1.45 | $2.42 | $ .545 | $1.27 | $4.82 | $12.925 | ..... | ..... | $0.90ww | $3.40m | | | | Galv. | 10.25a | 2.75 | 7.75a | |
| Baltimore | 121.50 | 1.45 | 2.42 | .574 | 1.07 | 4.455v | 11.7875 | $178.20 | $274.80 | .99 | 2.70 | | | Lap Weld‡ | 36 | 22.50a | 20.60a | 25.50a | |
| Birmingham | 103.00 | 1.45 | 2.42 | .42 | .75 | 3.30v | 10.50v | 260.00‡ | 400.00‡ | 1.25m | 2.75m | | | Black | 36 | 24.25d | 6.75a | 24.25d | 10.00d |
| Boston | 122.00 | 1.47 | 2.30 | .609qrt | 1.1745qrt | 4.815qrt | 12.505qrt | 187.80r | 289.20r | 1.54mg | 3.65mg | | | | | 24.50ab | 6.75a | 13.50ab | +6.35ab |
| Chicago | 107.00 | 1.45 | 2.30 | .77m | 1.48m | 6.25m | 19.00vm | 150.00‡ | 270.00‡ | .80 | 2.80 | | | | | | | | |
| Cincinnati | 106.00 | 1.47 | 2.29 | .644t | 1.242t | 4.77t | 12.1975t | 240 00 | 370 00 | .80m | 2.95m | | | | | | | | |
| Cleveland | 108.00 | 1.47 | 2.29 | .546v | 1.053a | 4.32v | 11.48 | 158 00m | 245.65m | .85m | 3.25m | | | | | | | | |
| Dallas | 112.00 | 1.47 | 2.54 | .439 | .799 | 4.00b | 9.17b | ..... | ..... | .49 | 1.60 | | | | Galv. | 17.00 | | 17.00 | |
| Denver | 115.00 | 1.53 | 2.54 | .45m | .78m | 3.48m | .... | ..... | ..... | .74m | 2.50m | | | | 36 | 17.00 | | 17.00 | |
| | | | | | | | | | | | | | | | Black | 15.00 | | 17.00 | |
| Detroit | 108.00 | 1.47 | 2 29 | .80 | 1.50 | 5.95 | 16.40 | 230 00m | 360 00m | .95 | 3.82 | | | 2½ & 3 in. Butt Weld‡ | Galv. | 17.00 | | 17.00 | |
| Kansas City | 113.00 | 1.47 | 2.29 | .56 | 1.00 | 4.13 | 11.20 | 250.00 | 480.00 | .90 | 3.25g | | | | 36 | 17.00 | | 17.00 | |
| Los Angeles | 129.65z | 1.58 | 2.20 | .671 | 1.46l | 5.97l | 14.89l | 228.20l | 348.90l | .95 | 2.75f | | | | Black | 16.00 | | 17.00 | |
| Minneapolis w | 112.00 | 1.40 | 2.42 | .76mo | 1.38mo | 5.70mo | .... | ..... | ..... | 1.42h | 4.05h | | | | | | | | |
| Montreal | 110.00 | .... | .... | 1.07u | 1.73u | 5.82u | 8.93u | ..... | ..... | 1.17h | 3.11j | | | | | | | | |
| New Orleans | 101.50 | 1.45 | 2.42 | .51 | .925 | 4.91 | .... | 280.00p | 460.00p | .65 | 2.20 | | | | | | | | |
| New York | 111.35 | 1.47 | 2.30 | .68 | 1.30 | 5.12 | 13.50 | ..... | ..... | 1.15 | 3.00 | | | | | | | | |
| Philadelphia | 110.00 | 1.45 | 2.30 | .65 | 1.25 | 4.95e | 12.65e | 300.00‡ | 350.00‡ | 1.60h | 3.95h | | | | | | | | |
| Pittsburgh | 110.00 | 1.47 | 2.30 | .468m | .864m | 3.86m | 9.78m | 153.00 | 244.00 | 1.05h | 2.50h | | | | | | | | |
| St. Louis | 112.00 | 1.45 | 2.29 | .56 | 1.03 | 4.22 | 9.80 | 180.00l | 380.00l | 1.20il | 2.70il | | | | | | | | |
| San Francisco | 127.00 | 1.53 | 2.20 | .74d | 1.62d | 6.59d | 16.47d | 235.00l | 392.00l | 1.05w | 3.30n | | | | | | | | |
| Seattle | 138.73 | 1.54 | 2.20 | .51b | .91b | .... | .... | 150.00z | ..... | .90h | 2.85h | | | | | | | | |
| Toronto | .... | .... | .... | .76 | 1.425 | 5.70 | .... | 157.00 | 280.00 | .87 | 3.05 | | | | | | | | |

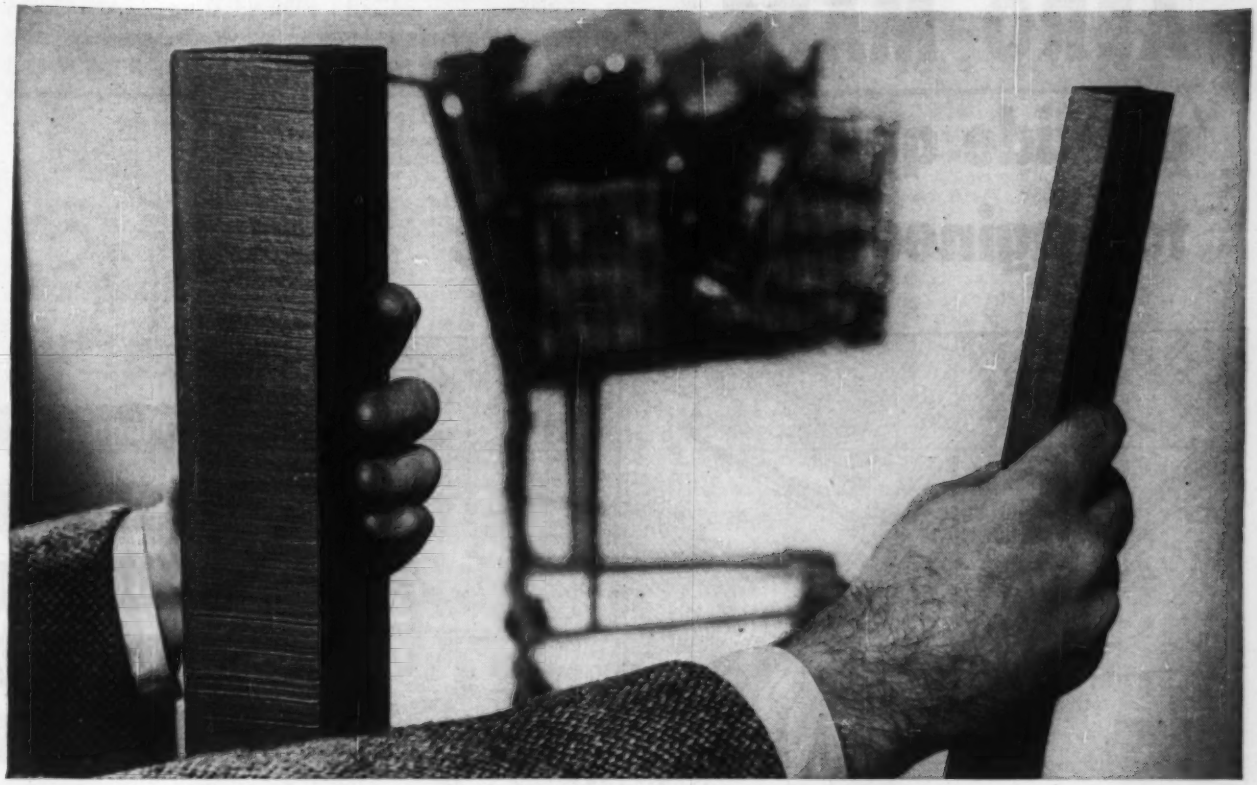
| | Mill |
|---|---|
| Lorain, Ohio | ..... |
| Aliquippa, Pa | ..... |
| Sparrows Pt., Md. | ..... |
| Benwood, W. Va. | 24.25 |
| Youngstown, O. | 24.25 |
| Indiana Harbor, Ind. | 23.25 |
| Sharon, Pa | 24.25 |
| Wheatland, Pa. | 24.25 |
| Etna, Pa. | 24.25b |
| Fontana, Calif. | 21.25b |

‡ Threaded and coupled. a 3½ to 4 in. b Continuous weld. c 5 and 6 in. d 1 in.

*‡ Delivered *a Class B & heavier. Based on existing freight rates; subject to rate change. Gas pipe and class A, $5 per ton additional. 4 in., $7 per ton additional. 30 in. and larger, usually, $1 per ton less. *b Extra strength ASTM C 200–44T *c 4-in., $90 *d 88361-A *e 30-in. *f 21 in. *g culvert pipe; reinforced, ASTM C 76–41 *h reinforced, ASTM C 75–41 *i reinforced, ASTM C 76–37 *j centrispun; no standard specs. in Canada *k 2% off for cash *l fob plant *m truck delivery *n LCL delivered, fob truck *o listed price based on LCL (no min.) *p freight allowed to destination in city *q ASTM C 13–40 *r CL fob origin, freight allowed *s 2 ft lengths *t 3 ft lengths *u CESA A 60–1941 specs. used *s standard strength *w 6 in., $1.67 per ft., Class 150, CL, fob truck *x 6 in. *y ss; add 20% for d.s.

* WROUGHT STEEL PIPE: Deduct discounts shown above from the following standard list consumers carload prices to get mill price. List prices per ft. (based on approx. $200 per net ton): *Butt Weld* ¼ in., 5½¢; ⅜ in., 6¢; ½ in., 6¢; ¾ in., 8½¢; 1 in., 11½¢; 1¼ in., 17¢; 1½ in., 23¢; 1¾ in., 27½¢; 2 in., 37¢; 2½ in., 58½¢; 3 in., 76½¢. *Lap Weld* 2½ in., 92¢; 4 in., $1.09; 5 in., $1.48; 6 in., $1.92. Add freight rates plus 3% transportation tax to get destination price.

WROUGHT IRON PIPE: List prices per ft. same as for wrought steelpipe, but add following "discounts" to get Pittsburgh mill price: *Butt Weld* — 1 in. black, + 32.75, galv. + 61.0; 1¼ in. black, + 32.75, galv. +60.50, 1½ in. black, + 29.25 galv. + 56.75; *Lap Weld* — 2½ in. to 3 in. black + 33.50 galv. + 59.5; 4½ in. to 6 in. black + 30.50 galv. + 54.75. Add freight rates plus 3% transportation tax to get destination price.



# Which is the ECONOMY SIZE?

## 3 times stronger than carbon steel, Lukens "T-1" steel slashes equipment weight, reduces costs

The lighter weight, reduced thickness of Lukens "T-1" steel, in comparison to heavier, thicker plates of ordinary carbon steel, makes possible substantial over-all savings in material and fabrication costs for equipment builders. This new all-purpose steel—a unique, low-carbon, quenched and tempered alloy plate steel—has a yield strength three times greater than ordinary carbon steel. It can cut costs by reducing weight and still increase payload and efficiency.

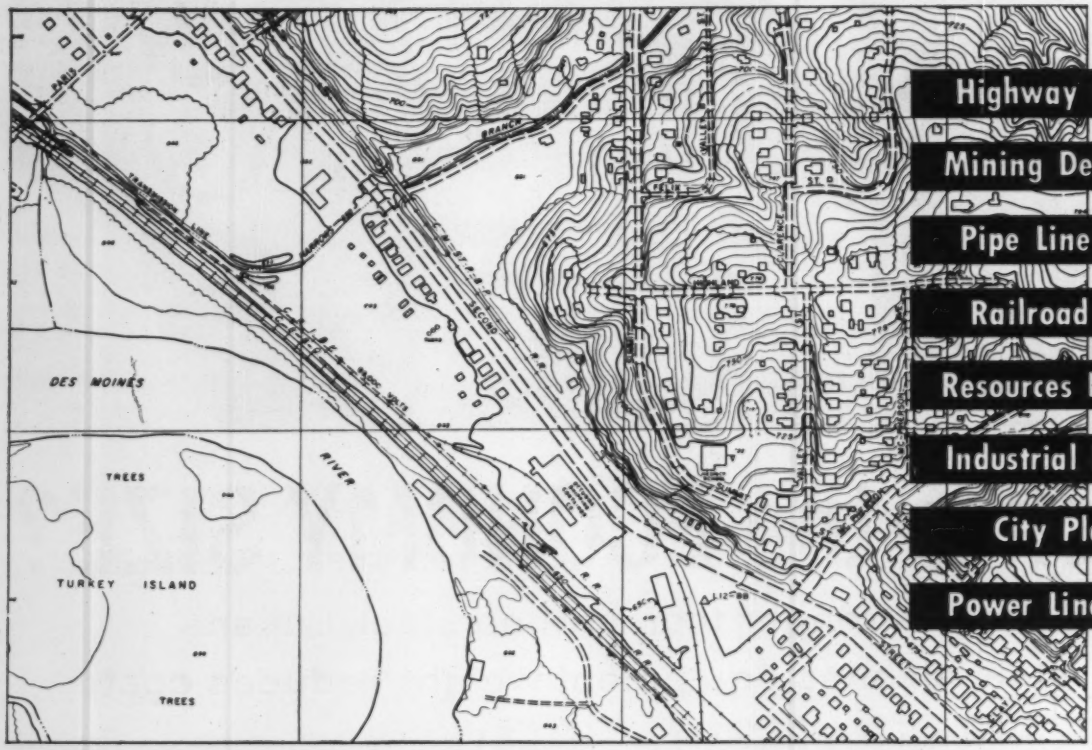
Equipment fabrication is no problem with Lukens "T-1" steel. It is readily welded without preheating or stress relieving; equipment can easily be fabricated, modified or repaired at the field site. Its exceptional toughness and resistance to wear and impact lowers maintenance costs and lengthens equipment life. Additional savings are possible where Lukens' range of steel plate sizes—including the widest and heaviest available anywhere—makes possible the use of wider sizes that require fewer welded seams.

Lukens "T-1" steel is the most recent addition to Lukens' complete line of carbon, alloy and clad steels. Its unusual combination of properties suit it especially to application in pressure vessels, bridges, shipbuiliding, construction machinery and general industrial equipment. On problems of design, selection, application and fabricating techniques, Lukens offers full technical assistance. If you would like further information on Lukens "T-1" steel, write for Bulletin 765 on its properties, characteristics and applications. Address: Manager, Marketing Service, 774 Lukens Building, Lukens Steel Company, Coatesville, Pa.

**LUKENS** **"T-1" STEEL** THE NEWEST IN A COMPLETE LINE OF ALLOY STEELS

LUKENS STEEL COMPANY, COATESVILLE, PA.

# AERO MAPS
## provide quick answers to engineering problems




- Highway Planning
- Mining Development
- Pipe Line Location
- Railroad Routing
- Resources Inventories
- Industrial Expansion
- City Planning
- Power Line Location

On any large scale project, AERO photo maps, delivered for just a few cents an acre, will speed your general planning. From these photos, skilled AERO cartographers prepare topographic maps of engineering accuracy—provide complete map data months ahead of ground survey methods.

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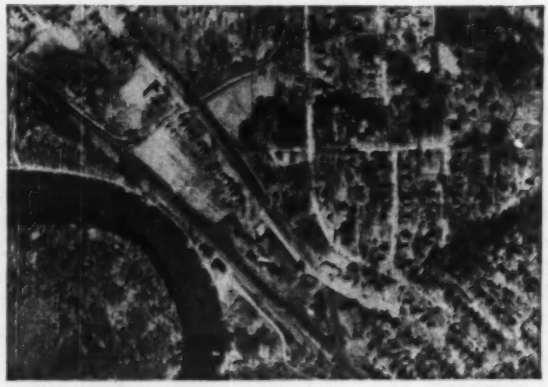

The photograph and map section shown above are part of a recent AERO survey of Ottumwa, Iowa. Experienced AERO mapping crews are equally "at home" in remote corners of the world.

**AERO SERVICE CORPORATION**

*Philadelphia 20, Pa.*

OLDEST FLYING CORPORATION IN THE WORLD

*Offices in* Tulsa, Duluth, Salt Lake City

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## LUMBER, TIMBER, PLYWOOD—PER M FT., B.M., CARLOAD LOTS F. O. B.

SHORT LEAF YELLOW PINE AND DOUGLAS FIR

All S. L. Y. P. is No. 2 common or better and for No. 1 N. C. Box. (Prices in Bold Face)
*All Fir boards, dimensions, planks No. 2, Fir small timbers and timbers are No. 1. Lengths up to 20 ft.*
*(Prices in italics)*

| | 1x6 s4s | 1x8 s4s | 2x4 s4s | 2x6 s4s | 2x8 s4s | 2x10 s4s | 3x12 Rgh | 6x12 Rgh | 12x12 Rgh | LONG LEAF Y. P. Merchantable grade up to 20 ft. 2x12 Rgh | 12x12 Rgh | PLYWOOD Rail freight increment (See note for base price) ⅜" | ¼" |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Atlanta † | $77.00 | $79.00 | $72.50 | $73.00 | $76.50 | $80.00 | $78.00 | ..... | ..... | | | $22.32 | $27.24 |
| Baltimore * | 87.00 | 92.00 | 87.00 | 87.00 | 90.00 | 98.00 | 105.00 | ..... | ..... | $185.00 | $180.00 | 25.92 | 31.60 |
| | *128.00g* | *128.00g* | *128.00g* | *128.00g* | *128.00g* | *128.00g* | *134.00g* | *$142.00* | *$142.00* | | | ..... | ..... |
| Birmingham † | 81.50 | 83.50 | 80.50 | 87.50 | 90.50 | 95.50 | 100.50 | ..... | ..... | 120.50 | 165.50 | 21.78 | 26.58 |
| | *105.00* | *105.00* | *108.50* | *108.50* | *108.50* | *105.00* | *105.00* | *105.00* | *105.00* | ..... | ..... | ..... | ..... |
| Boston * | 101/109a | 110/117a | 102/104a | 102/104a | 102/104a | 102/104a | ..... | ..... | ..... | ..... | ..... | 25.92 | 31.60 |
| " | *90.00n* | *90.00n* | *119/121* | *119/121* | *119/121* | *119/121* | *119.00* | *120.00* | *120.00* | ..... | ..... | ..... | ..... |
| Chicago ** | 99.00 | 102.00 | 95.00 | 110.00 | 118.00 | 119.00 | 114.00 | ..... | ..... | 142.00 | 142.00 | 22.45 | 27.37 |
| | *106.00* | *106.00* | *118.00* | *117.00* | *117.00* | *118.00* | *125.00* | *125.00* | *125.00* | ..... | ..... | ..... | ..... |
| Cincinnati * | 93.75 | 94.75 | 83.00 | 90.50 | 94.75 | 103.00 | 110.50 | ..... | ..... | 131.75 | 131.75 | 25.00 | 30.48 |
| | *100.75* | *103.00* | *111.50* | *109.00* | *111.25* | *111.50* | *136.75* | *136.75* | *136.75* | ..... | ..... | ..... | ..... |
| Cleveland ** | 94.00 | 96.00 | 103.00 | 102.00 | 102.00 | 103.00 | ..... | ..... | ..... | ..... | ..... | 25.37 | 30.93 |
| | ..... | ..... | *118.00* | *114.00* | *114.00* | *115.00* | *123.00* | *123.00* | *123.00* | ..... | ..... | ..... | ..... |
| Dallas †† | 72.00 | 78.00 | 68.50 | 68.50 | 73.50 | 65.50 | 130.50 | ..... | ..... | 127.50 | 134.50 | 18.72 | 22.80 |
| Denver * | *Not in stock* | | *121.50* | *122.50* | *122.50* | *122.50* | *125.00* | *137.75* | *140.50* | ..... | ..... | 13.92 | 16.98 |
| Detroit ‡ | 115.00 | 118.00 | 108.00 | 115.00 | 118.00 | 118.00 | | | | ..... | ..... | 25.00 | 30.48 |
| | *125.00* | *125.00* | *131.00* | *130.00* | *130.00* | *130.00* | *165.00* | *165.00* | *165.00* | ..... | ..... | ..... | ..... |
| Kansas City * | 125.00 | 125.00 | 120.00 | 125.00 | 130.00 | *140.00* | ..... | ..... | ..... | ..... | ..... | 16.56 | 20.16 |
| | *130.00* | *130.00* | *135.00* | *134.00* | *134.00* | *135.00* | *155.00* | *175.00* | *200.00* | ..... | ..... | ..... | ..... |
| Los Angeles 1 | *107.00* | *107.00* | *107.00* | *107.00* | *107.00* | *107.00* | *120.00* | *130.00* | *130.00* | ..... | ..... | 16.61ab | 20.25ab |
| Minneapolis # | *135.00* | *135.00* | *140.00* | *140.00* | *140.00* | *140.00* | *175.00* | *175.00* | *175.00* | ..... | ..... | 19.89 | 24.25 |
| Montreal ab | 92.00 | 100.00 | 92.00 | 92.00 | 110.00 | 125.00 | ..... | ..... | ..... | 105.00 | 105.00 | ..... | ..... |
| | *155.00* | *155.00* | *155.00* | *155.00* | *155.00* | *155.00* | *130.00* | *130.00* | *130.00* | ..... | ..... | ..... | ..... |
| New Orleans † | 100.00 | 100.00 | 92.50 | 88.00 | 90.00 | 94.00 | 118.50 | ..... | ..... | 150.00 | 148.00 | 18.72 | 22.80 |
| † | *117.50* | *117.50* | *121.00* | *127.50* | *127.50* | *127.50* | *125.00* | *133.00* | *133.00* | ..... | ..... | ..... | ..... |
| New York 3 | 112.50 | 115.50 | 125.00 | 127.50 | 127.50 | 127.50 | 167.50 | ..... | ..... | 250/270 | 250/270 | 25.92 | 31.60 |
| | ..... | ..... | *127.50* | *127.50* | *127.50* | *127.50* | *165/175* | *170/180* | *170/180* | ..... | ..... | ..... | ..... |
| Philadelphia ‡ | | Range from $117.00 to $137.00 | | | | 117/137 | 117/137 | ..... | ..... | 214/224 | 214/224 | 25.92 | 31.60 |
| | | *Range from $131.00 to $163.00* | | | | *131/163* | *136/158* | *158.00* | *158.00* | ..... | ..... | ..... | ..... |
| Pittsburgh † | | Range from $105.00 to $107.00 9 | | | | | 120.00 | ..... | ..... | 120.00 | 130.00 | 25.92 | 31.60 |
| | *125.00* | *125.00* | *130.00* | *130.00* | *135.00* | *135.00* | *125.00* | *145.00* | *145.00* | ..... | ..... | ..... | ..... |
| St. Louis ‡ | 122.00 | 125.00 | 121.00 | 129.00d | 134.00e | 137.00e | | | | ..... | ..... | 18.72 | 22.80 |
| | | ..... | *148/153i* | *148/153e* | *152/156e* | *156/159e* | *195.00e* | *195.00* | *195.00* | ..... | ..... | ..... | ..... |
| San Francisco A† | *79.00* | *79.00* | *90.00* | *90.00* | *90.00* | *90.00* | *106.00* | *119.00* | *144.00* | ..... | ..... | 12.22 | 14.91a |
| Seattle † | *79.00* | *79.00* | *79.00* | *79.00* | *79.00* | *79.00* | *85.00* | *95.00* | *95.00* | ..... | ..... | ..... | ..... |
| Toronto a | 97.00 | 100.00 | 95.00 | 97.00 | 103.00 | 105.00 | 120.00 | ..... | ..... | 110.00 | ..... | ..... | ..... |
| | *135.00* | *120.00* | *130.00* | *130.00* | *130.00* | *130.00* | *135.00* | *140.00* | *140.00* | ..... | ..... | ..... | ..... |

† F.o.b. mill. * F.o.b. city, CL, out of yard. ** F.o.b. city, CL, direct mill shipment. ‡ Deliv. to contr. CL. 1. Retail, LCL, at yard. # Retail, LCL, deliv. 2. Deliv. truck lots. 3. asd.

LUMBER: **Bold Face type: Southern Pine.** *Italics, Douglas Fir.* a Spruce b Tax exempt. c 5M lots. d 8, 10, & 12 ft. lengths. e 8 to 16 ft. lengths. g No. 1 common. i 8 ft. lengths. k No. 3 common. n #3. A Rail freight rate from North west mills to San Francisco are $11.50 to $15.00 per M ft. bm. From Northern Calif. mills $9.00 by rail, $9.50 by truck. All rates for surfaced stock. For rough, add $3.00 to above figures.

PLYWOOD: Interior Fir Plywood, 4' by 8' panels, 5-ply, sanded 2 sides, water resistant glue, carload lots, delivered per 1,000 sq. ft. surface. Seattle base price on ⅜", $170.00; on ¼", $191.00. Exterior ⅜", $190.00, ¼", $212.00. For other centers add rail freight increment from table on proper size. Oiling and edge sealing charges included. a Lower rate by water shipment. b 50,000 lb. minimum.

## GLASS, EXPLOSIVES, CHEMICALS

| | WINDOW GLASS Discounts from jobbers list, Feb. 1, 1950a Single or Double Thickness A quality | B quality | EXPLOSIVES Per lb. 40% Ammonia Gelatin in 50 lb. cases delivered in 200 lb. lots* | |
|---|---|---|---|---|
| Atlanta | 79% | 80% | $0.2365 | |
| Baltimore | 78%d | 80%d | .2365 | |
| Birmingham | 82% | 83% | .1840 | |
| Boston | 75–10% | 75–10% | .2365 | |
| Chicago | 74% | 74% | .2365 | |
| Cincinnati | 76% | 76% | .2365 | |
| Cleveland | 74–10–10% | 74–10–10% | .2765 | |
| Dallas | 75% | 75% | .2440 | |
| Denver | 77% | 77% | .2415 | |
| Detroit | 74–10–10% | 74–10–10% | .2365 | |
| Kansas City | 78–10% | 78–10% | .2415 | |
| Los Angeles | 73% | 73% | .2390 | |
| Minneapolis | 73–10% | 73–10% | .2415 | |
| Montreal | 40–5%b,c | 40–10–5%b | 21.35h | |
| New Orleans | 78% | 79% | .2415 | |
| New York | 80–2½% | 80–2½% | .3975g | |
| Philadelphia | 77% | 79% | .2365 | |
| Pittsburgh | 80% | 80% | .2090 | |
| St. Louis | 80–10% | 80–10% | .2415 | |
| San Francisco | 61% | 69% | .2365 | |
| Seattle | 73% | 76% | .2390 | |

Price of 60% Ammonia Gelatin is $0.15 per lb. higher than 40% in U.S.; $1.75 per 100 lbs. higher in Canada.

*Glass:* a Jobbers' list price per box, 14 x 20, sa, $42.75 for A quality, $37.50 for B quality; 14 x 20, da, $60.00 for A quality, $52.75 for B quality. b Discount from list, Apr. 1951; sales tax included, but 6% tax exemption not allowable for. c Single thickness. d Discount 6/15/52.

*Explosives:* * Urban prices influenced by service charges or local storage and delivery regulations do not consistently reflect quantity prices in less congested areas. g In borough of Kings, Queens, and Richmond and in Manhattan south of Canal St., add delivery charge of $20.00 per trip. h F.o.b. Belcoil (near Montreal), per 100 lb. forcite, 40%. Forcite 60%, $23.10.

**40% Ammonia Gelatin price ranges in other than urban areas, per lb. (except Seismograph Grades)**

| | C/L 20,000 lb. net | Tons | 200 lb. lots |
|---|---|---|---|
| E. of the Miss., except Fla. and Me. | $0.184 | $0.2165 | $0.2365 |
| W. of Miss. to Rocky Mtn. States, Fla. and Maine | .189 – .1965 | .2215–.229 | .2415–.249 |
| Rocky Mtn. States | .189 – .2015 | .2215–.229 | .2415–.254 |
| Pacific N. W. States | .1865–.199 | .219 – .2315 | .239 – .2515 |
| Pacific S. W. States | .184 – .1915 | .2165–.219 | .2365–.2415 |

## PILES, TIES F. O. B.

**PILES**

Prices per linear foot, fir and pine, bark off, f.o.b. cars, New York. Fir based on Wash. and Ore. points to New York shipping area; pine based on freight from Norfolk.

| Dimensions | Points | Length | By Rail Pine* | Fir |
|---|---|---|---|---|
| 12-in. at butt | 6-in. | 30 to 50-ft. | $0.51 | .... |
| 12-in.— 2-ft. from butt | 6-in. | 50 to 59-ft. | .54 | .... |
| 12-in.— 2-ft. from butt | 6-in. | 60 to 69-ft. | .58 | — — |
| 12-in.— 2-ft. from butt | 6-in. | 90 to 100-ft. | .... | .... |
| 13-in.— 3-ft. from butt | 8-in. | 91 to 100-ft. | .... | .... |
| 14-in.— 2-ft. from butt | 6-in. | 50 to 69-ft. | .50/.58 | .... |
| 14-in.— 2-ft. from butt | 6-in. | 70 to 79-ft. | .73/.83 | .93 |
| 14-in.— 2-ft. from butt | 6-in. | 80 to 85-ft. | .83/.93 | .94 |
| 14-in.— 2-ft. from butt | 8-in. | 85 to 89-ft. | .... | 1.00 |
| 14-in.— 2-ft. from butt | 8-in. | 90 to 100-ft. | .... | 1.03 |

* Pine piling over 80-ft. available only in limited quantities.

**RAILWAY TIES**

| Prices f.o.b. per tie for carload lots: | | 6"x8"x8' Untr. | 6"x8"x8' Tr. | | 7"x9"x9'6" Untr. | 7"x9"x9'6" Tr. |
|---|---|---|---|---|---|---|
| Birmingham | Hardwood, Grade 3 | $1.95a | $4.00a | Gv. | $2.55 | $4.90a |
| | Grade 2 | 1.75 | 3.80a | " | 4 2.40 | 4.70a |
| | Grade 1 | 1.45 | 3.40a | " | 3a2.10 | 4.50a |
| Chicago | Red Oak | .... | 3.20a | | .... | 4.10/4.20a |
| New York | S. L. Sap Pine | 2.00 | 4.00 | | 3.00 | 5.00 |
| | Mixed Oak | 2.50 | 4.50 | | 3.50 | 5.50 |
| Philadelphia | Red Oak | 2.55 | 3.90 | | 3.45 | 5.10 |
| St. Louis | White Oak | 2.20 | .... | | 2.50 | .... |
| | Red Oak | 2.10 | 2.65a | | 2.35 | 3.00a |
| | Sap Pine or Cypress | .... | 2.55a | | .... | 2.95a |
| San Francisco | Douglas Fir | 2.25d/ | 3.25e/ | | 3.37b/ | 5.01ca/ |

Tr.—Treated; Untr.—Untreated. a Creosoted. b 7"x9"x9'. c Empty cell. d Green f.o.b. cars.

**CHEMICALS**

Water, sewage treatment, road work, f.o.b. carlots, New York

| | |
|---|---|
| Bleaching powder in drums f.o.b. works, per 100 lb | $5.02 |
| Chlorine cylinders, liquid, per lb. f.o.b. works | .095 |
| Calcium chloride, 77–80%, flaked, 100-lb. paper bag, f.o.b. works, ton | 27.00 |
| Silicate of soda, 52 deg., in drums, f.o.b. works, per 100 lb | 2.30 |
| Soda ash, 58%, in paper bags, per 100 lb. dense | 1.70 |
| Sulphate of aluminum, commercial, in 100-lb. bags f.o.b. works | 1.85 |
| Sulphate of copper, in bags, 99% per 100 lb. f.o.b. works | 10.35 |

## STRUCTURAL CLAY BUILDING TILE, BRICK AND LIME—DELIVERED

| | STRUCTURAL CLAY TILE PARTITION — SCORED Per M. lots of 2,000 pieces or over, 3x12x12 in. | 4x12x12 in. | 8x12x12 in. | STRUCTURAL CLAY TILE — LOAD BEARING — SCORED Per M. lots of 2,000 pieces or over, 8x12x12 in. | 10x12x12 in. | 12x12x12 in. | BRICK Per M. in quantity Common backing | Straight hard | LIME Per ton, in paper, Carload lot, Hydrated finishing | Common hydrated | Pulverized or lump |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Atlanta | $128.65 | $128.65 | $256.00 | $288.00 | ..... | ..... | $25.50 | $26.50 | ..... | ..... | ..... |
| Baltimore | 194.00 | 207.00 | 388.00 | 440.00 | 572.00 | 654.00 | 36.00*k* | 41.00*k* | 32.00 | 21.50 | ..... |
| Birmingham | 126.00*p* | 142.00*p* | 252.00*p* | 284.00*p* | 354.00 | 438.00 | 27.00*ff* | 32.00*gg* | 29.25 | 24.00 | ..... |
| Boston | 196.00† | 209.00† | 392.00† | 283.25† | ..... | ..... | 36.85*p* | 39.85*p* | 30.00† | 28.00† | ..... |
| Chicago | 135.00 | 145.00 | 280.00 | ..... | ..... | ..... | 28.00 | 30.00 | 31.00 | 27.00 | ..... |
| Cincinnati | 205.00*j* | 215.00*j* | 295.00*jdd* | ..... | ..... | ..... | 45.00*j* | 46.00*j* | 27.50*j* | 27.50*j* | ..... |
| Cleveland | 170.00** | 181.00** | ..... | ..... | ..... | ..... | 38.50 | 38.50 | 28.75 | 23.75 | 33.50*ee* |
| Dallas | ..... | 118.00 | ..... | ..... | ..... | ..... | 19.75 | 32.25 | 32.00 | 21.80 | ..... |
| Denver | ..... | ..... | ..... | ..... | ..... | ..... | 34.00 | 41.00 | 34.80*bb* | 28.00*bb* | 34.00*bb* |
| Detroit | 130.00 | 138.00 | 259.00 | ..... | 315.00 | 360.00 | 37.50*cc* | 38.50*cc* | 34.00 | 30.00 | ..... |
| Kansas City | 127.50 | 147.50 | 270.00 | 270.00 | 340.00 | 400.00 | 29.25 | 29.25 | 32.00 | 27.50 | 28.50 |
| Los Angeles | *r* | *r* | *r* | *r* | *r* | *r* | 27.50§ | ..... | 34.00 | 34.00 | 35.00 |
| Minneapolis | 179.00*p* | 199.00*p* | 410.00*p* | 199.00*pw* | ..... | ..... | 40.00**p* | 47.00 | 40.00*bbe* | 30.00*bbe* | 42.00*bbds* |
| Montreal | 165.00*aq* | 181.00*au* | 325.00*au* | 230.00 | 248.00*s* | ..... | 39.50 | 46.00 | 34.80 | 22.00 | 13.75*u* |
| New Orleans | 170.00 | 170.00 | 310.00 | 380.00 | ..... | ..... | 31.00 | ..... | ..... | 28.00 | 28.00 |
| New York | 151.90*h* | 162.00*h* | 222.70*ch* | 245.40*hn* | ..... | ..... | 41.00 | ..... | 36.00 | 34.00 | ..... |
| Philadelphia | 156.30 | 166.80 | 312.70 | 375.20 | ..... | ..... | 30/34 | 34/40 | 27.60 | 25.60 | 3.17 |
| Pittsburgh | 138.00 | 151.00 | 260.00 | 228.00 | 297.00 | 341.00 | 36.00 | 46.00*y* | 25.00 | 23.00 | 2.97*m* |
| St. Louis | 147.00*cc* | 168.50*cc* | 338.25*cc* | 465.00*cc* | 439.00 | 621.50 | 41.50*el* | 43.00*s* | .92*aaa* | .75*aaa* | 1.30*aaspee* |
| San Francisco | 156.85*a** | 177.10*a** | 235.30*dda** | ..... | ..... | ..... | 39.50 | ..... | 26.60 | 26.60 | 28.25 |
| Seattle | 225.00*cc* | 250.00*cc* | 350.00 | 250.00*ccw* | ..... | ..... | 42.00*s* | 54.00*s* | 42.00*sàà* | 37.50 | 3.90*màà* |
| Toronto | 138.70 | 148.90 | 273.75 | 222.00*f* | ..... | ..... | 41.50 | 59.00 | 40.00 | 33.50 | 29.00 |

† F.o.b. yard Roxbury. *a* Smooth. *b* Per 50 lb. bags. *c* 6 x 12 x 12 in.-3 cell. *d* Pulverized hot. *e* 5%, 10th following month. *f* 8 x 8 x 12. *g* 5½ x 8 x 12. *h* F.o.b. trucks, job site N.Y.C. *j* Truck load or over. *k* $1.00 discount. *l* Red face. *m* Per bbl., 180 lb. *n* 7½ x 7¾ x 12. Speed title. *p* Truck lots. *q* Provincial and Municipal tax extra. *r* Not used because of earthquake danger. *s* 2% discount for cash. *t* 5½x8x11¼. *u* Tax exempt. *v* Sand lime. *w* 5 x 8 x 12. *y* Stacked. *z* Pebble lime price per 80 lb. sack. *aa* Price per sack. Lime not sold per ton. *bb* LCL. *cc* Truck delivery. *dd* 6 x 12 x 12. *ee* Pebble lime. *ff* 80% common. *gg* Select. *hh* LCL. § F.o.b. yard. ** Warehouse delivery. * F.o.b. Stockton.

## PAINT, ROOFING—F.O.B. CARLOAD LOTS

| | RED LEAD Per 100 lb. in 600-lb. (Approx.) bbl. Dry *a* | WHITE LEAD Per 100 lb. in 100 lb. cases in oil *w* | READY-MIXED PAINT Per gal., drums Graphite *b* | Aluminum *c* | Ferric Oxide *d* | ROOFING SUPPLIES; Carload lots f.o.b. factory Rolls, slate surfaced, 85–90 lb. per sq. | Asphalt felt, per 100 lb. | Tar felt, per 100 lb. | Asphalt coating per gal. | Tar pitch 380 lb bbl. per ton |
|---|---|---|---|---|---|---|---|---|---|---|
| Atlanta | $17.75 | $28.275 | $3.26 | $3.51 | $3.01 | $3.10 | $2.91 | $2.91 | $0.60 | $55.00 |
| Baltimore | 17.50 | 27.90 | 2.75 | 4.25 | 3.35 | 2.42 | 3.73 | 3.73 | .44 | 48.32 |
| Birmingham | 17.75 | 28.275 | 3.90 | 3.40 | .... | 2.65 | 2.46 | 2.46 | .75*ff* | 35.46*ee* |
| Boston | 17.50 | 27.90 | .... | .... | .... | 2.98*g q* | 2.82*oq* | 2.82*oq* | .42*q* | 50.50*q* |
| Chicago | 17.50 | 27.90 | .... | .... | .... | 3.06‡*u* | 2.97‡*o* | 2.97‡*o* | 40.00‡*bbr* | 50.00‡ |
| Cincinnati | 17.50 | 27.90 | .... | .... | .... | 2.65 | 2.46 | 2.46 | .50*y* | 49.36 |
| Cleveland | 17.50 | 27.90 | 2.23*pqq* | 2.45*qq* | 2.58*qq* | 2.78*q* | 2.55*o* | 2.55*o* | .42*y* | 42.70*hh* |
| Dallas | 17.75 | 28.65 | .... | 4.05 | .... | 3.50*q* | 3.75*o* | 4.35*o* | .36 | 58.50*hh* |
| Denver | 18.00 | 28.40 | 3.29 | 5.15 | 3.04 | 2.65 | 2.46*o* | 2.46*o* | .43*ff* | 45.00 |
| Detroit | 17.50 | 27.90 | 2.35 | 3.25 | 2.50 | 2.78 | 2.55*f* | 2.55*f* | .53 | 46.00 |
| Kansas City | 17.50 | 28.65 | 3.50 | 3.00*ys* | 2.65 | 2.78 | 2.58*o* | 2.58*o* | .42 | 61.95 |
| Los Angeles | 17.50 | 28.15 | 3.30*n* | 4.50*n* | 4.20*n* | 3.10*n* | 2.00*en* | *l* | .64*n* | *l* |
| Minneapolis | 17.50 | 29.88/28.02 | .... | .... | .... | 2.63*dd* | 2.55*hidd* | 2.55*hidd* | .46*idd* | 44.00*r* |
| Montreal | ..... | 21.95 | 2.95*Dff* | 4.05*Eff* | 3.25*Ff* | 4.05*t* | 3.60*t* | 3.60*t* | 1.00*kt* | 3.60*k* |
| New York | 17.50 | 27.90 | .... | .... | .... | 2.78*G* | 2.55*Go* | 2.55*Go* | .46*Gz* | 44.00* |
| Philadelphia | 17.50 | 27.90 | 3.60 | 3.40/3.65 | 3.50/4.60 | 2.54 | 2.94 | 2.94 | .37 | 26.00 |
| Pittsburgh | 17.50 | 27.90 | 2.68 | 2.85 | 3.15 | 2.75 | 2.60*o* | 2.60*o* | .38 | 49.00 |
| St. Louis | 17.50 | 27.90 | .... | .... | .... | 2.63 | 2.55*h* | 2.55*h* | .42*y* | 51.21 |
| San Francisco | 17.50 | 28.15 | 2.40 | .... | 3.40 | 2.79 | 4.00*aa* | .... | .43 | ..... |
| Seattle | 17.50 | 28.40 | 3.07*mcc* | 2.93*mcc* | .... | 3.45*mocc* | 2.91*hmcc* | .... | .59*mcc* | 52.00*mcc* |
| Toronto | ..... | ..... | .... | .... | .... | 4.00 | 3.65 | .... | .90 | 80.00 |

‡ Delivered. Note: Red lead in oil 50¢ higher than white lead in oil. *a* Red lead prices change frequently due to pig lead price changes. *b* U. S. War Dept. Spec. 3-49A. *c* ASTM Spec. D266–31. *d* 80% minimum ferric oxide. *e* 15 lb. *f* Per 432 sq. ft. *g* F.o.b. yard, Roxbury. *h* Per roll, 65 lb. *i* Net carload lot prices; Minneapolis and vicinity. *k* Per cwt. *l* Not used. *m* 1% discount for cash. *n* F.o.b. city. *o* Per 60-lb. roll. *p* 6-drum, 50 gal. ea. *q* Per 90-lb. roll. *r* F.o.b. factory, Chicago. *s* 466 Med. *t* Federal tax included. *u* Per 90-lb. square. *v* Per ton. *w* Price to large paint contractors is $1.25 less. *x* Mineral surfaced. *y* 55-gallon container. *z* Drums. *aa* Approximate cost per 100 lbs. *bb* Roofers coating and cement; Price per ton. *cc* LCL, truck delivery. *dd* 2% cash discount. *ee* Asphalt pitch in 100 lb. package. *ff* 5-gal. drums. *gg* F.o.b. factory. *hh* Incl. freight. *D* Std. Black. *E* Ready-mixed. *F* Over 80% ferric oxide. *G* Freight absorbed to destination not exceeding .35 cwt. * Aver. wt. approx. 425 to 550 lbs. drums.

## SKILLED AND COMMON WAGE RATES—PER HOUR

| | Bricklayers | Carpenters | Struct. Iron Workers | Hoisting Engineers | Plasterers | Electrical Workers | Steamfitters | Common Labor Building | Common Labor Heavy Const. |
|---|---|---|---|---|---|---|---|---|---|
| Atlanta | $3.10 | $2.60 | $2.85 | $2.60 | $2.75 | $3.00 | $3.15 | $1.33 | $1.33 |
| Baltimore | 3.20*d* | 2.75 | 3.325*t* | 3.10/3.25 | 3.075*t* | 2.975 | 2.975*t* | 1.675*t* | 1.675*t* |
| Birmingham | 3.25 | 2.50 | 2.925*k* | 2.32 | 2.72 | 3.75*k* | 3.125*k* | 1.375 | 1.475 |
| Boston | 3.35*v* | 2.925*t* | 3.475*t* | 3.40 | 3.375*l* | 3.18*R* | 3.20*d* | 2.22*Y* | 2.22*Y* |
| Chicago | 3.55*k* | 3.30*v* | 3.50*k* | 3.15*m* | 3.625*y* | 3.53*f* | 3.39*o* | 2.50*k* | 2.50*k* |
| Cincinnati | 3.40 | 3.15 | 3.275*t* | 2.925/3.175 | 3.10 | 3.28*N* | 3.445*Z* | 2.20 | 2.10 |
| Cleveland | 3.45*k* | 3.40 | 3.40*k* | 3.40 | 3.40 | 3.325*w* | 3.40*d* | 2.65 | 2.65 |
| Dallas | 3.50 | 2.75 | 2.875 | 2.75 | 3.437 | 3.00 | 3.00 | 1.50 | 1.50 |
| Denver | 3.50 | 2.925*t* | 2.925*t* | 2.78 | 3.375*t* | 3.00 | 3.15 | 1.925 | 1.925 |
| Detroit | 3.58*ve* | 3.324*q* | 3.475*P* | 3.30*rz* | 3.49*dl* | 3.655*H* | 3.125*k* | 2.55;*z* | 2.55*v* |
| Kansas City | 3.625 | 2.85 | 3.00 | 3.045 | 3.325 | 3.18*o* | 3.25*k* | 2.105 | 2.13 |
| Los Angeles | 3.60 | 2.96*d* | 3.175*t* | 2.72*d* | 3.687*S* | 3.25 | 3.35*d* | 2.235*t* | 2.235*t* |
| Minneapolis | 3.325 | 2.90 | 3.07 | 2.85 | 3.10*d* | 3.29*n* | 3.75*t* | 2.15 | 2.15 |
| New Orleans | 3.175 | 2.60 | 2.975*m* | 2.85*m* | 2.85*m* | 3.00*k* | 3.10*v* | 1.475 | 1.475 |
| New York | 4.15*bv* | 3.57*bJ* | 3.975*v* | 3.84*J* | 4.15*A* | 3.63*aaF* | 3.815*bL* | 2.415*J* | 2.415*J* |
| Philadelphia | 3.92*x* | 3.30 | 3.65*jM* | 3.07/3.82*v* | 3.625*S* | 3.80*uv* | 3.615*q* | 2.025 | 2.325 |
| Pittsburgh | 3.625*k* | 3.275*k* | 3.225*k* | 3.425*k* | 3.375*k* | 3.50 | 3.375*k* | 2.175*k* | 1.98*d* |
| St. Louis | 3.625*c* | 3.225*h* | 3.225*k* | 3.225*k* | 3.25*k* | 3.50*c* | 3.50*E* | 2.275*k* | 2.275*k* |
| San Francisco | 3.75*v* | 3.16; | 3.175*k* | 2.96*v* | 3.37*k* | 3.35*U* | 3.56*K* | 2.275*v* | 2.275*v* |
| Seattle | 3.40*d* | 2.76*d* | 3.07*d* | 3.00*d* | 3.25*d* | 3.135*X* | 3.26*T* | 2.35*d* | 2.35*d* |
| Montreal*† | 2.00 | 1.80 | 1.90 | 1.70 | 2.05 | 2.00 | 2.10 | 1.25 | 1.25 |
| Toronto** | 2.558 | 2.392 | 2.39 | 2.19 | 2.496 | 2.60 | 2.444 | 1.35 | 1.35 |

* Cost of living bonus now included in basic wage. # Includes 5¢ hr tool replacement. † Plus 8% fringe benefits. ** Incl. 4% vacation fund.

*a* 6 hr. day. *b* 7 hr. day. *c* Incl. 3% vac. stamp fund plus 7½¢ WF for bricklayers; 4% for electricians plus 8¢ WF, 1% PF. *d* Incl. 10¢ H&WF. *e* Incl. 10¢ VF. *f* Incl. 6% WF. *g* Incl. 11½¢ WF. *h* $2.725 homes & housing plus 7½¢ WF. *i* Incl. 17¢ WF. *j* Incl. 10½¢ hr. WF. *k* Incl. 7½¢ hr. WF. *l* Incl. 4% VF. *m* Incl. 5¢ hr. WF. *n* Incl. 8¢ H&WF, 6% VF, 1% PF. *o* Incl. 10¢ PF, 7¢ WF. *p* Incl. 3% WF, 3% PF. *q* Incl. 10¢ ins; 4% vac. and holiday pay. *r* Incl. 4% WF and 20¢ PF. *s* Incl. 5% W&PF, 4% VF, 1% NC, 6 PH. *t* Incl. 7½¢ H&WF. *u* Incl. 1½% PF. *v* Incl. 10¢ WF. *w* Negotiating. *x* 5¢ VP. *y* Incl. 22½¢ WF. *z* Incl. 7½¢ IF, 5¢ H&WF. *A* Incl. 15¢ WF, 15¢ PF *w* 20¢ B.F. *B* Incl. 3% WF. *C* Incl. 2½¢ H&WF. *E* Incl. 6% WF, plus travel pay per day. *F* Plus $4 per day Annuity contrib. *H* Incl. 7¢ WF, 6% VF. *I* Incl. 7½¢ H&WF, 5¢ for Advtg. *J* Incl. 5% WF, 6 PH. *K* Incl. 11¢ WF, 12½¢ VF, 10¢ PF. *L* Incl. 3% WF, 3% PF, 2% VF, 1% EF. *M* Incl. 7½¢ PF. *N* Incl. 1% WF. *O* Incl. 10¢ WF, 1% PF. *P* Incl. 10¢ hosp. ins.; 5¢ vac. *R* Incl. 12¢ WF and 1¢ apprentice. *S* Incl. 12½¢ H and WF. *T* Incl. 21¢ H, W & VF. *U* Incl. 7½¢ WF, 4% VF. *W* Incl. 2% VF. *X* Incl. 6¢ VF, & 7½ H & WF. *Y* Incl. 7¢ H & WF. *Z* Incl. 9½¢ WF.

## MEXICO CITY PRICES

| In Pesos, F.o.b. City | | May '55 | June '55 |
|---|---|---|---|
| Common Wages—Building (8 hr. day) (Peons) | av. per hr. | 1.19 | 1.19 |
| Common Wages—Heavy Const. (8 hr. day) (Peons) | av. per hr. | 1.19 | 1.19 |
| Skilled Labor Wages | | | |
| Carpenters (8 hr. day) 1 cl. | av. per hr. | 2.25 | 2.25 |
| Bricklayers (8 hr. day) 1 cl. | av. per hr. | 2.25 | 2.25 |
| Struct. Iron Workers (8 hr. day) Remachadores. | av. per hr. | 1.37* | 1.37* |
| Struct. Steel Shapes 3"–15" x 12 meters | per metric ton | 1490.00 | 1490.00 |
| Reinf. Steel, Corr. Rods ¼" x 11 meters | per ton | 1490.00 | 1490.00 |
| ⅜" x 11 meters | per ton | 1490.00 | 1490.00 |
| ½" x 11 meters | per ton | 1490.00 | 1490.00 |
| ⅝" x 11 meters | per ton | 1490.00 | 1490.00 |
| ¾" x 11 meters | per ton | 1490.00 | 1490.00 |
| 1" x 11 meters | per ton | 1490.00 | 1490.00 |
| Gravel truck load of 3½ cu. meters | | | |
| Blue Gravel | per tr. load | 72.00 | 70.00 |
| Rose Gravel | per tr. load | 65.00 | 65.00 |
| Cement, Std. Port. (Tolteca) | per ton | 160.00 | 185.00 |
| Lumber | | | |
| 3rd Class Pine | per M ft. | 1000.00 | 1400.00 |
| 1st Class Pine | per M ft. | 1600.00 | 2000.00 |
| 2nd Class Pine | per M ft. | 1300.00 | 1800.00 |

* 1st & 2nd floors. Aver rate 4.38

**ENR Skilled Average** (Bricklayers, Carpenters, Iron workers): **$3.247. ENR Common Average $2.073**

## BUILDING BOARD & LATH AND INSULATION—DELIVERED TRUCKLOAD LOTS

| | GYPSUM PLASTER BOARD tapered edge per Msq ft ½" | ⅜" | GYPSUM BOARD LATH plain or perf per Msq ft ⅜" x 16" x 48" | GYPSUM SHEATHING tongue & groove per Msq ft ½" x 2' x 8' | FIBER BOARD SHEATHING asph impreg & coat per Msq ft ½" sq ed | ½" T&G | FIBER BOARD INSULATION sq edge, paint per Msq ft ½" | MINERAL WOOL INSULATION† loose, per 40-lb bag a | 3" batts per M sf | GLASS FIBER INSULATION† loose, per 40-lb bag a | 3" batts per M sf | ALUMINUM FOIL 60¢ Kraft 1 side foil per roll of 250 s. f. | Expansible Blanket 2 layers foil per Msq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Atlanta | ..... | $65.00 | $45.00 [f] | $75.00 | $75.00 | ..... | $75.00 | $1.08 | $75.00 | $1.45[b] | $85.00 | ..... | ..... |
| Baltimore | $47.00[f] | 41.50[f] | 31.00[f] | 52.50[f] | 63.00[f] | 106.00[f] | 67.00[f] | 1.30 | 66.00 | 1.60 | 45.00 | $4.00[w] | $33.50 |
| Birmingham | 67.00 | 56.00 | 46.75 | 75.00 | 68.50 | 116.00 | 71.60 | 1.32 | 70.00 | 1.60 | 75.00 | 3.76[w] | ..... |
| Boston | 46.50[m] | 41.00[m] | 31.50[m] | 48.00[m] | 64.00[m] | 109.00[m] | 79.00[bb] | 1.45 | 75.00 | 1.40 | 56.00 | 5.80 | 54.50 |
| Chicago | 67.00 | 50.00 | 41.00 | 57.00 | 80.00 | 117.00 | 76.00 | 1.60 | 84.00 | ..... | 62.00[bb] | 5.25 | ..... |
| Cincinnati | 44.01[w] | 38.08[w] | 30.08[w] | 45.81[w] | 63.00[w] | 110.00[w] | 65.00[w] | ..... | 61.00 | 1.25 | 75.00 | 3.31 | 45.80[w] |
| Cleveland | 50.00 | 50.00 | 40.00 | 60.00 | 70.00 | 111.00 | 70.00 | 1.35/1.50 | 75.00 | 2.20 | 60.00 | 7.76[d] | ..... |
| Dallas | 55.00 | 52.50 | 40.00 | 62.50 | 73.50 | 122.50 | 70.00 | 1.90 | 65.00 | 1.35 | 55.83 | 4.25 | ..... |
| Denver | 60.00 | 52.50 | 40.00 | 60.00 | 72.90 | 123.00 | 71.90 | ..... | 71.00[c] | 1.30 | 50.00 | 11.00[r] | ..... |
| Detroit | 55.00 | 48.50 | 35.75 | 54.00 | 55.00[w] | 93.00[w] | 55.00[w] | ..... | ..... | 1.95[b] | 73.00 | ..... | ..... |
| Kansas City | 65.00 | 55.00 | 40.00 | 65.00 | 72.00 | 120.00 | 75.00 | 1.40 | 80.00 | 1.40 | 80.00 | 5.90[d] | ..... |
| Los Angeles | 57.50 | 50.00 | 0.31[e] | 57.50 | 71.87 | 121.25 | 70.00 | ..... | 80.00 | 1.35[e] | 64.00 | 17.00[w] | 25.40 |
| Minneapolis | 72.00 | 63.00 | 0.40[e] | 65.00 | 70.00 | 114.00 | 70.00 | 1.30 | 78.00 | 1.30 | 78.00 | 6.50 | ..... |
| Montreal | 60.00 | 52.00 | 39.00 | 53.00 | 60.00 | ..... | 62.00 | 1.00 | 62.00 | 1.00 | 62.00 | 19.50[e] | 49.50 |
| New Orleans | 65.00 | 50.00 | 45.00 | 65.00 | 65.00 | 100/115 | 70.00 | 1.95 | 79.00 | ..... | ..... | 15.68[e] | 36.00 |
| New York | 50.00 | 44.50 | 34.00 | 51.00 | 67.00 | 108.00 | 66.00 | 1.55 | 69.00 | 1.90 | 72.00[i] | 5.20 | 48.80[w] |
| Philadelphia | 50.00 | 48.00 | 34.00 | 48.50 | 67.50 | 105.00 | 49.20 | ..... | 63/70 | ..... | 70/75 | 5.50/6 | 34.50/44.50 |
| Pittsburgh | 65.00 | 55.00 | 40.00 | 68.00 | 65.00 | 103/105 | 60.00 | 1.80 | 70.00 | 1.80 | 70.00 | 4.10 | ..... |
| St. Louis | 58.00 | 50.00 | 39.00 | 58.50 | 65.00 | 115.00 | 75.00 | 1.70 | 80.00 | 1.30 | 69.00 | 5.50 | ..... |
| San Francisco | 49.00[r] | 42.75[r] | 0.33[e] | 53.00[b] | 58.00 | 94.00 | 60.25 | 1.60 | 72.00 | 1.55 | 72.00 | 4.82 | 52.50 |
| Seattle | 57.00 | 50.50 | 40.00 | 59.00 | 71.40 | 120.35 | 70.20 | 1.50[w] | 81.00 | 1.65[e] | 62.00[aa] | 4.25[r] | ..... |
| Toronto | 61.00 | 50.00 | 40.00 | 64.50 | 75.00 | ..... | ..... | 0.90 | 47.00 | ..... | 51.00 | 21.50[e] | 67.50 |

[a] for hand packing [b] per 30¢ bag [c] carloads [d] 40¢ kraft paper [e] 50,000 sq ft up quantity [f] full trailer loads [g] 80¢ kraft paper backing [h] LCL [i] flameproof $75.00 [j] 133 lin ft; per 100 roll [k] plain core; asph core $56/M sq ft [l] 2-in: $32/M sq ft [m] 10 ton quantities [n] distributor's siding [o] per Msf roll [p] per sf [q] per cwt [r] per 35¢ bag [s] honeycomb, 1¼-in [t] fob city [u] per sq. yd. [v] 25¢ bag [w] 32¢ bag [x] fob warehouse [y] 2" [z] in 250 sf rolls, of 18", 20", or 24" width]

## PLASTER, VERMICULITE AND METAL BUILDING SHEETS & TUBING

| | PLASTER† Neat per ton | Gauging per ton | VERMICULITE† Home insulation pellets | Plaster aggregate | Concrete aggregate‡ Treated | Untreated | ALUMINUM SHEET[a] Flat[j] .102" th 36"x96" & 48"x144" | Corr roof .032" th 35"x12' | STAINLESS STL SHEET[a]-TYPE 302[y] 20 ga 48"x96-120" | 28 ga 36"x120" | COPPER WATER TUBING-TYPE L 2000 ft lots per ft[a] ⅜"[b] | ½"[a] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | per bag of 4 cu ft | | | | per lb[f] | per sh[w] | per cwt[kk] | per cwt[ww] | | |
| Atlanta | $29.00 | $36.00 | $1.45 | $1.35 | $1.50 | ..... | $0.350[w] | $7.067[w] | $53.68 | $61.18 | $14.49[f] | $20.29[f] |
| Baltimore | 21.50 | 32.00 | 0.95 | 1.15 | ..... | $1.15 | 0.370 | 0.377[r] | 52.75 | 60.25 | 0.1518 | 0.2129 |
| Birmingham | 35.00 | 43.00 | 1.55 | 1.55 | 1.75 | ..... | 0.391 | 8.148 | 54.18 | 61.68 | 0.1588 | 0.2230 |
| Boston | 21.00 | ..... | 1.15 | 1.18 | ..... | 1.30 | 0.424[e] | 23.60[rr] | 52.00[dd] | 57.50[dd][ff] | 0.1588 | 0.2230 |
| Chicago | 24.60 | 24.60 | 1.45 | 1.50 | 1.50/1.60 | ..... | 0.419[e] | 8.574[ff] | 56.25[ee] | 63.75[ee] | 0.1588 | 0.2230 |
| Cincinnati | 25.00[e] | 22.00[e] | 1.75 | 1.75 | 1.85 | 1.75 | 0.408 | 9.72 | 56.30 | 68.30[ff] | 0.1588 | 0.2230 |
| Cleveland | 26.00 | 40.00 | 1.25 | 1.32 | 1.40 | ..... | 0.369[ee] | 7.569 | 52.00 | 59.05 | 15.88[f] | 22.30[f] |
| Dallas | 29.80 | 31.80 | 1.20 | 1.25 | 1.30 | ..... | 0.379 | 0.439[r] | 55.50 | 63.00 | 0.1449 | 0.2029 |
| Denver | 24.00 | 24.00 | 1.40 | 1.30 | ..... | 1.50 | 0.389 | 8.339 | 54.07[w] | 61.57[w] | 0.1449 | 0.2029 |
| Detroit | 24.00 | 24.00 | 1.32 | 1.33 | 1.42 | 1.42 | 0.397 | 8.919 | 56.25 | 63.55 | 15.00[f][w] | 25.34[f] |
| Kansas City | 30.00 | 35.00 | 1.20 | 1.30 | 1.40 | ..... | 0.389 | 8.79 | 56.77[w] | 64.27[w] | 15.88[f] | 22.30[f] |
| Los Angeles | 25.00 | 26.00 | 1.25[ii] | 1.20[ii] | 1.45[ii] | 1.25[ii] | 0.422 | 8.72 | 60.85 | 68.35 | 0.1588 | 0.2230 |
| Minneapolis | 31.00 | 31.00 | 1.30 | 1.60 | ..... | 1.60 | 0.425 | 7.68 | 57.01 | 69.01[ff] | 0.1507[d] | 0.2118[d] |
| Montreal | 28.80 | 33.20 | 1.00 | 1.30 | 1.35 | 1.30 | 0.384 | 8.00 | 54.00 | ..... | 0.206 | 0.22 |
| New Orleans | 35.00 | 37.00 | 1.50 | 1.20 | 1.25 | 1.25 | 0.359 | 0.366[eee][kk] | 56.68 | 64.18 | 0.1449 | 0.2029 |
| New York | 23.00 | 29.00 | 1.25 | 1.20 | 1.40 | 1.30 | 0.391[ee] | 8.30[ff] | 55.07 | 62.32 | 15.88[f] | 22.30[f] |
| Philadelphia | 23/25 | 32.00 | 1.35 | 1.35 | 1.35 | 1.40 | 26.50[ee] | 7.55[ff] | 53.23[ff] | 60.98[ff] | 14.49[f] | 20.29[f] |
| Pittsburgh | 25.00 | 29.00 | 1.25 | 1.25 | 1.30 | 1.25 | 0.42 | 9.19 | 53.70 | 59.20 | 0.1518 | 0.2129 |
| St. Louis | 30.00 | 37.00 | 1.25 | 1.50[ii] | 1.60[ii] | 1.50 | 0.402[w] | 8.567[w] | 53.14[kk] | 71.14[kk] | 15.88[f][w] | 22.30[f][w] |
| San Francisco | 24.00 | 26.00 | 1.05 | 1.03 | ..... | 1.24 | 0.416[ee] | 8.14[w] | 60.65 | 68.00 | 0.1449 | 0.2029 |
| Seattle | 33.00 | 36.50 | 1.45 | 1.25[b] | 1.65 | ..... | 0.369 | 7.569 | 60.50[ee] | 68.00[ee] | 0.1449 | 0.2029 |
| Toronto | 40.00 | 42.00 | 1.20 | 1.30 | 1.45 | 1.35 | 0.47 | 19.95 | 56.00 | 88.00 | 0.33[yy] | 0.30[yy] |

† trucklots, delivered [a] fob whse [f] delivered [w] fob city [b] ½" O.D. [e] ⅝" O.D. [d] 10M ft & over [e] 2-10M ft; 10M ft & up: $0.1925/ft [f] per 100 ft [w] 5 tons & up; cold roll, anneal & pickled; 2B finish [kk] 15M lb [ee] 3003 alloy; 1100 alloy: $0.456/lb [f] 1100 & 3003 alloy, mill finish [rr] per bag of 3 cu ft [ii] treated has air entraining agent; untreated does not [ee] 2-10M ft [ff] fob plant, fr allow [ee] 5M lb & up [yy] 150 sq ft quantity [ww] 2M lb quantity [kk] per lb [dd] 36"x96": 19.81 lb/sh; 48"x144":21.7 lb/sh [ee] 19.31 lb/sh [eee] in 4M-lb skids; $0.296/lb in 1M-lb cases [ee] 48"x144" [ee] 36"x96" $13.25/sh [aa] 15M lb & up [bb] fob mill [ee]28"x8-12" [dd] add $0.75/cwt for boxing [aa] 4 tons & up [ff] 26 ga [yy] add $2/cwt boxing; $0.75/cwt on skids [bb] Theoretical wt for 48"x96": 30.4-lb, per sh. [ww] 300-bag lots [ff] per 100-lb bag [bb] mill shipment; add $2 per cwt for immediate del [aaa] Theoretical wt: 19.7-lb per sh [aa] Delly. warehouse means [aa] ¼" O. D. [yy] Incl 10% sales tax

## EQUIPMENT OPERATOR WAGE RATES

| | Truck drivers 1½ T | —4 cy Dump | +4 cy | Tractor Operators incl bulldozers 34-49 hp | 70-100 hp | 100 & over | Tractor scraper 15-16 cy | Power cranes & shovels ½ cy | ¾ cy | Motor grader oper | Air comp oper | Air tool oper |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Atlanta | 1.40 | 1.40 | 1.60 | 2.335 | 2.335 | 2.335 | 2.325 | 2.85 | 2.85 | 2.325 | 2.10 | 1.55 |
| Baltimore | 1.65[e] | 1.80[e] | 1.90[e] | 2.45/2.60[b] | 2.45/2.60[b] | 2.45/2.60[b] | 2.45/2.60[b] | 3.10/3.25[b] | 3.10/3.25[b] | 2.45/2.60[b] | 2.45/2.60[b] | 2.25 |
| Birmingham | 1.59 | 1.85[ff] | 1.92[ee] | 2.46 | 2.46 | 2.46 | 2.60 | 2.60 | 2.60 | 2.46 | 2.185 | 1.525 |
| Boston | 1.945[c] | ..... | ..... | 3.025[d] | 3.025[d] | 3.025[d] | 3.025[d] | 3.40 | 3.40 | 3.40 | 2.555 | 2.22[e] |
| Chicago | 2.12[ee] | ..... | ..... | 2.90[ee] | 3.05[aa] | 3.10[ee] | 2.90[e] | 3.35[e] | 3.35[e] | 3.00[e] | 3.00[e] | ..... |
| Cincinnati | 2.10[f] | 2.20[f] | 2.30 | 2.925 | 2.925 | 2.95 | 2.925 | 3.175 | 3.175 | 3.175 | 3.175 | 3.175 |
| Cleveland | 2.42[m] | 2.42[m] | 2.42[m] | 3.15 | 3.15 | 3.15 | 3.15 | 3.40 | 3.40 | 3.15[b] | 3.025 | 3.025 |
| Dallas | 1.50 | 1.50 | 1.50 | 1.45/2.625[f] | 1.50/2.625[f] | 1.50/2.625[f] | 1.50/2.625[f] | 1.50/2.625[f] | 1.60/2.625[f] | 1.50/2.625[f] | 1.45/2.00[f] | 1.45/1.55[f] |
| Denver | 2.05 | 2.05 | 2.15 | 2.05 | 2.66 | 2.66 | 2.66 | 2.83 | 2.83 | 2.66 | 2.66 | 2.275 |
| Detroit | 2.35 | 2.35 | 2.35 | 3.40[m] | 3.40[m] | 3.40[m] | 3.40[m] | 3.40[m] | 3.40[m] | 3.40[m] | 3.025[m] | 2.68[m] |
| Kansas City | 2.065[e] | 2.065[e] | 2.14[e] | 2.25 | 2.80[e] | 2.80[e] | 2.80[e] | 3.045 | 3.045 | 2.66[e] | 2.80[f] | 2.19 |
| Los Angeles | 2.34[e] | 2.34[e] | 2.37[e] | 2.80[m] | 2.80[m] | 2.80[m] | 3.21[m] | 3.03[m] | 3.03[m] | 2.94[m] | 2.50[m] | 2.41[m] |
| Minneapolis | 2.15 | 2.15[e] | 2.30[e] | 2.53 | 2.75[e] | 2.97[e] | 2.75 | 2.97[e] | 3.23[e] | 2.53 | 2.42 | 2.25 |
| New Orleans | 1.575 | 1.575 | 1.575 | 2.80 | 2.80 | 2.80 | 2.80 | 2.80 | 2.80 | 2.80 | 2.15 | 1.575 |
| New York | 2.12¼[aa] | 2.52[bb] | 2.52[bb] | 3.176[cc] | 3.176[cc] | 3.176[cc] | 3.31[cc] | 4.095[cc] | 4.095[cc] | 3.31[cc] | 3.31[cc] | 2.78[cc] |
| Philadelphia | 1.825/2.025[w] | 1.825/2.025[w] | 1.825/2.025[w] | 3.07/3.82[m] | 3.07/3.82[m] | 3.07/3.82[m] | 3.07/3.82[m] | 3.07/3.82[m] | 3.07/3.82[m] | 3.07/3.82[m] | 2.80[m] | 2.05[m] |
| Pittsburgh | 2.20[m] | 2.20[m] | 2.20[m] | 2.95[e] | 3.275[e] | 3.325[e] | 3.325[e] | 3.425[e] | 3.425[e] | 3.325[e] | 3.325[e] | 2.275[e] |
| St. Louis | 2.20 | 2.20 | 2.20 | 3.225[e] | 3.225[e] | 3.225[e] | 3.225[e] | 3.225[e] | 3.225[e] | 3.225[e] | 2.625[e] | 2.20 |
| San Francisco | 2.30[m] | 2.30[m] | 2.315[m] | 3.07[m] | 3.07[m] | 3.07[m] | 3.07[m] | 3.40[m] | 3.40[m] | 3.23[m] | 2.68[m] | 2.40[m] |
| Seattle | 2.48[ee] | 2.48[ddd] | 2.68[eee] | 2.75[m] | 2.95[m] | 2.95[m] | 2.95[m] | 3.30[m] | 3.30[m] | 3.05[m] | 2.75[aaa] | 2.62[m] |
| Montreal | 1.25 | 1.25 | 1.25 | 1.63 | 1.63 | 1.63 | 1.63 | 1.89 | 1.89 | 1.63 | 1.70 | 1.50 |
| Toronto | 1.51[ii] | 1.51[ii] | 1.72[ii] | 1.98[ii] | 1.98[ii] | 1.98[ii] | 1.98[ii] | 2.45[ii] | 2.45[ii] | .... | 2.13[ii] | 2.13[ii] |

[e] incl 5¢/hr HWF [b] lower rates, straight time, other broken [c] 2-axle; 10-wheel $2.00; Euclid $2.20 [d] intermediate [e] bldg constr; highway $2.145 [f] less than 2-1 [r] blade [b] scoop, bldg [c] scoop, road [d] plus $2 pd by employer for hosp. death benefits to family [b] bldg constr; steel constr $3.40 [f] higher rates are union, other taken from min wage scale approved by County Commissioners Court [m] incl 10¢ H&WF [n] flatbed [o] under 10 cy [p] bwar 10 cy [q] over 50 hp [r] blade grader [s] form and subgrade [t] single [u] incl 7½¢ HWF [v] up to 6 cy [w] 6-8 cy [x] cat oper [y] up to 3½ cy [z] 3½ cy & over [aa] plus approx $5.30 wk W & PF [bb] incl 3% WF, 2% PF, 11 PH [cc] incl 5% WF [dd] up to 5 cy [ee] 5 cy & over [ff] 3 T but not incl 5 [gg] 5 tons & over [hh] excavating [ii] incl 4% VP [jj] includes 12¢ H, W & PF

# Bids Asked—Low Bidders—Contracts Awarded—First Section—

*Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager*
*J. A. MAHONEY, M. WETZEL, L. M. WINISKI, M. E. SCIORRA, F. S. DEMBEK, Reports.*
*J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.*

## NEW ENGLAND

### HEAVY CONSTRUCTION—LB & CA

† **Davison Constr. Co.**, 1306A Elm St., Manchester, N. H. LB $771,000, est. $700,000-$800,000. officers' club, N. C. O. club, high altitude training bldg., special weapons bldg., security gate house, Air Force Base, ENG-19-016-55-153, PORTSMOUTH, N. H. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids June 21. CD 6/9.

▲ **MASSACHUSETTS**—Massachusetts Turnpike Auth., 80 Boylston St., Boston,

**L. G. Defelice & Son, Inc.**, 1817 Mettleton Ave., North Haven, Conn. CA $3,322,181, est. $3,300,000. Contr. 51-192 hy. and bridge constr., Chicopee. CD 5/24, under LB.

▲ **MASSACHUSETTS**—Massachusetts Turnpike Auth., 80 Boylston St., Boston, Zone 16,

**Lizza & Sons, Inc.**, 21 Orchard St., Oyster Bay, L. I., N. Y. CA $3,463,182, est. $3,500,000. Contr. 51-021 hy. and bridge constr., Lee and Becket. CD 6/3, under LB.

### BUILDINGS—LB & CA

**Carroll-Verge & Whipple, Inc.**, 370 Waheonah St., Pittsfield, Mass. LB $814,900, est. $850,000. Junior HIGH SCHOOL, RUTLAND, VT. City, School Dpt., Rutland, Vt. Cleverdon, Varney & Pike, 120 Tremont St., Boston, Mass., engrs. Bids June 21. CD 5/26.

▲ **D. A. Sullivan & Sons, Inc.**, 82 North St., Northampton, Mass. LB $1,594,869, est. $1,600,000. STUDENT UNION BLDG., AMHERST, MASS. University of Mass., Alumni Bldg., Assoc., Amherst, Mass. Bids June 17. CD 6/8.

## MIDDLE ATLANTIC

### HEAVY CONSTRUCTION—LB & CA

NEW YORK—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany,

N. Y.—**D. A. Collins Constr. Co., Inc.**, Mechanicville, N. Y. LB $819,742. (1 bidder) two-span 300 ft. long bridge to carry Rte. 11 (Main St.) across the Oswegatchie River in Gouverneur, St. Lawrence Co.;

N. Y.—**N. R. Corbisello, Inc.**, P.O. Box 45, Binghamton, N. Y. and **Triple Cities Constr. Co.**, 17 Tompkins St., Binghamton, N. Y. LB $780,521. (joint venture) (6 bidders). 301 ft. long bridge and approaches to carry North Chenango St. over Brandywine Ave. exten. urban arterial route (Rte. 7) at Pickle Hill in Port Dickinson and constr. 150 ft. long bridge and approaches to carry Brandywine arterial over Bevier St. in Binghamton, Broome Co. Bids June 23. CD 5/31, under Streets and Roads.

▲ NEW YORK—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany,

N. Y.—**Klevens Corp.**, 3 Federal St., Yonkers, N. Y. LB $5,079,989 (6 bidders) grading, drainage, paving 1.65 mi. 6-lane divided Horace Harding Expressway and 2.78 mi. various access and service roads between Woodhaven Blvd. and point east of Grand Central Pkwy., following generally along existing Horace Harding Blvd., Queens Co.;

N. Y.—**Slattery Foundation Corp.**, 46-36 54 Rd., Maspeth, N. Y. LB $4,351,087. (4 bidders) work on Horace Harding Expressway from point about 300 ft. west of Cloverdale Blvd. eastward generally along existing Horace Harding Blvd. through Alley Park to point just west of Marathon Pkwy., Queens Co.;

N. Y.—**John Arborio, Inc.**, W. Cedar St., Poughkeepsie, N. Y. LB $2,607,765. (7 bidders). reconstr. 2.91 mi. section of Rte. 17 starting at Neversink River Bridge at Bridgeville and exten. southeastward mostly on new location, to Lords Reservoir about 6 mi. west of Wurtsboro at western end of another Rte. 17 job, Sullivan Co.;

N. Y.—**Potter DeWitt Corp.**, Pavilion, N. Y. LB $2,385,212. (9 bidders) 7½ mi. section of Rte. 17 between Horseheads and East Corning all north of present route, Chemung and Steuben Counties; LB $598,885. (7 bidders) reconstr. 2.59 mi. Rte. 244 and 0.23 mi. exten. Rte. 34 near Van Etten, Chemung Co.;

N. Y.—**Hendrickson Bros., Inc.**, 63 N. Central Ave., Valley Stream, N. Y. LB $1,354,770. (3 bidders) reconstr., wid'n. separation of roadways on 1.81 mi. of Rte. 27 (Conduit Blvd. and Sunrise Hy.) to provide 3 traffic lanes in each direction between Hook Creek Blvd. in Queens Co. and Franklin Ave. in Valley Stream, Nassau Co. and between Liberty Ave. and Meadowbrook State Pkwy., in Freeport, Queens and Nassau Counties; LB $2,404,675. (2 bidders) grading, drainage, paving work 0.69 mi. section of Horace Harding Expressway and 1.57 mi. of various access and service roads from point 260 ft. west of Marathon Ave. eastward, generally along existing Horace Harding Blvd. to Nassau Co. line, Queens Co.;

N. Y.—**Maxim Kranz**, 447 Fort Washington Ave., New York 33, N. Y. LB $1,209,826. (3 bidders) wid'n., resurf. 8.71 mi. of Rte. 37 starting at intersection of Rtes. 37 and 26 (West Corners) exten. northward through Redwood to Jefferson-St. Lawrence Co. line, Jefferson Co.;

N. Y.—**Madison County Constr. Co., Inc.**, Madison, N. Y. LB $1,080,451. (7 bidders) relocation reconstr. 3.91 mi. of Rte. 7 starting in Belden at foot of Belden Hill exten. eastward toward Ninevah, bypassing Harpursville, Broome Co.;

N. Y.—**McLain Constr. Corp.**, 275 Mayville Ave., Kenmore, N. Y. LB $1,232,267. (2 bidders) 0.79 mi. section of Seymoure Street-River Rd. urban arterial route in Tonawanda, incl. four-span 448 ft. long plate girder bridge over Tonawanda Creek and Erie Barge Canal, Erie and Niagara Counties;

N. Y.—**Rhodes Constr. Co., Inc.**, Salamanca, N. Y. LB $1,096,586. (5 bidders) constr. 0.83 mi. section of East-West urban arterial route (Rte. 17) in Salamanca incl. seven-span 650 ft. long bridge over Allegheny River and reconstr. of 1.15 mi. Parkway Drive from Clinton St. to city line, Cattaraugus Co.;

N. Y.—**Torrington Constr. Co.**, 116 E. Main St., Torrington, Conn. LB $1,632,873. (8 bidders) relocation reconstr. 8.96 mi. Rte. 3 between Fine and Star Lake, St. Lawrence Co.;

N Y.—**Bero Constr. Corp.**, 305 McKinley Bldg., 259 Delaware Ave., Buffalo 2, N. Y. LB $879,836. (7 bidders) relocation of Rte. 5-20 in and near Canandaigua bypassing north of present Lake Rd route, totalling 2.25 mi. incl. 198 mi. of reconstr. Rte. 5.20 and 0.27 mi. exten. of East Lake Rd. (Rte. 364) from its present terminus on Lake Rd northward to new bypass, bypass will extend from point near Fall Creek Crossing east of city, westward on new location, Ontario Co.;

N. Y.—**Collins Brothers**, Mechanicville, N. Y. LB $876,587. (5 bidders) reconstr. 2.56 mi. section of Rte. 58 starting about 1/3 mi. west of Amsterdam's west city line and exten. southeastward and eastward on new location through the south end of Amsterdam, south of existing route to point near Rt. 160 intersection about 1/3 of mile east of city line, Montgomery Co.;

N. Y.—**Parlor City Constr. Co.**, Endwell, N. Y. LB $396,492. (6 bidders) "tuning fork" phase of Ithaca's urban arterial route system, exten. of East Green St. from Tioga St. to foot of State Street Hill, bending of East Seneca St. to meet extended Green St., new two-span 123 ft. bridge to carry South Aurora St. over new Green St. exten. and Six Mile Creek, Tompkins Co. June 23. CD 5/31.

▲ **Baldwin-Lima-Hamilton Co.**, Chester Park and Simpson Sts., Eddystone, Phila., Pa., LB $1,458,440, (1); $3,548,798, (3) combination; (13 bidders) furnishing, del., spillway gates, control gates and stop logs for Long Sault Dam and Iroquois Dam St. Lawrence Contr. No. P13, NEW YORK. The Power Authority of the State of New York, 270 Broadway, New York 7, N. Y. Bids June 23. CD 6/9;

**Canadian Vickers Ltd.**, Maisonneuve St., Montreal, Que. LB $1,964,850. (2). St. Lawrence Contr. No. P13. (New York).

▲† **Spearin Preston & Burrows, Inc.**, 50 Church St., New York 7, N. Y. LB $1,163,960. Schedule 1, rehabilitation of piers 1A, 1, 2, 3 and 4, Brooklyn Army Base Terminal, BROOKLYN, N. Y. U. S. Eng., 111 E. 16 St., New York 3, N. Y. Bids June 21. CD 6/8;

**Thor Wetleson, Inc.**, 826 Forest Ave., Staten Island 1, N. Y. LB $77,653. Schedule 2, (Brooklyn, N. Y.).

† **Gunnell Constr. Co.**, Tower Bldg., Wash., D. C. LB $836,000. (12 bidders) hangar, shops, boiler house, ENG.-49-080-55-80-(71), ANDREWS AIR FORCE BASE, MD. U. S. Eng., First and Douglas Sts., N.W., Wash. 25, D. C. Bids June 21. CD 5/26.

### BUILDINGS—LB & CA

▲† **Sovereign Constr. Co.**, 1181 Broadway, New York 1, N. Y. CA $2,051,827. rehabilitation BUILDINGS FY 55, Watervliet Arsenal, WATERVLIET, N. Y. U. S. Eng., 111 E. 16 St., New York 3, N. Y. CD 6/9, under LB.

▲† **Sovereign Constr. Co., and E. W. Tompkins Co.**, 1181 Broadway, New York 1, N. Y. CA $1,728,359. modernization and rehabilitation of BOILER PLANT and steam distr. lines, Watervliet Arsenal, ENG-30-075-55-452, WATERVLIET, N. Y. U. S. Eng., 111 E. 16 St., New York 3, N. Y. CD 6/20, under LB.

▲† **Planet Constr. Corp.**, 11 W. 42 St., New York 36, N. Y. LB $2,449,000 (10 bidders), 100-200 bed HOSPITAL, FY 52, FORT MONMOUTH, N. J. U. S. Eng., 111 E. 16 St., New York 3, N. Y. Bids June 23. CD 5/12.

▲ **Norman Earley**, Hagerstown, Md. LB $2,330,000 (12 bidders) Hagerstown High SCHOOL, HAGERSTOWN, MD. Washington Co., Bd. Educ., Hagerstown, Md. Bids June 23. CD 5/13.

▲ **Leimbach Constr. Co.**, 3906 Hickory Ave., Baltimore 11, Md. CA $1,932,000. concrete, masonry Dumbarton Junior High SCHOOL, Dumbarton Rd., TOWSON, MD. Comr., Baltimore Co., Aigburth Rd., Towson, Md. CD 5/16, under LB.

## SOUTH

### BUILDINGS—BA

**Va., Dayton**—HIGH SCHOOL—BA 7/12—Rockingham County School Bd., Harrisonburg, Consolidated High School. $800,000. Dixon & Norman, 1103 E. Main St., Richmond, archts.

### HEAVY CONSTRUCTION—LB & CA

▲† **Henry C. Beck Co.**, 1st. Natl. Bank Bldg., Atlanta, Ga., LB $1,811,000. U. S. Marine Corps. Auxiliary Landing Field, NOY 85631, Spec. 45186. BEAUFORT, S. C. Dist. P. Wks. Office, Bldg. 12, Naval Base, Charleston, S. C. Bids June 21. CD 6/3.

▲ **ALABAMA**—State Hy. Dpt., Montgomery,

Ala.—**McDowell & McDowell**, Box 1144, Nashville, Tenn. LB $903,775, Proposal "A", grading, drainage, bit. tr., 8.843 mi. Tarrant City-Mt. Pinson Rd. F-55 (3) and 374 (4), Jefferson Co.;

Ala.—**Burgreen Contrg. Co., Inc.**, Box 901, Athens, Ala. LB $84,121, grading, drainage, base 5.283 mi. FA—S-98 (5), Lawrence Co.;

Ala.—**W. S. Newell Constr. Co.**, Hope Hull, Ala., LB $105,558, grading, drainage, bit. tr. 4.808 mi. FA—S-111 (4) and SACP 7306-A, Montgomery Co.;

Ala.—**Charles R. Shepherd, Inc.**, Box 7273, Station "C", Atlanta, Ga., LB $814,280, grading, drainage, bit. tr. 11.878 mi. F-120 (3) and 180 (5), Bibb Co.;

Ala.—**Alvin J. Hazelrig, Jr.**, Cleveland, Ala., LB $76,613, grading, drainage, base 3.378 mi. FA—S-149 (4), Lawrence Co.;

Ala.—**Ashburn & Gray, Contrs.**, Box 58, Huntsville, Ala., LB $488,648, base, bit. tr. 9.869 mi. Proposals "C" and "D", F-286 (5); Madison Co.;

Ala.—**J. W. Gwin, Jr., Inc.**, 1803 Comer Bldg., Birmingham, Ala., LB $732,682, base, bit. tr. 15.117 mi. I-IN-358 (3), Limestone Co.;

Ala.—**B. F. Williams Constr. Co.**, Box 188, Ozark, Ala. LB $78,902, base, bit. tr. 8.142 mi. FA—S-477 (1), Tallapoosa Co.;

Ala.—**M. A. Evans Constr. Co.**, Rte. 1, Wetumpka, Ala. LB $82,921, base, bit. tr. 10.117 mi. FA—S-547 (3), Monroe Co.; LB $96,961, base, bit. tr. 15.189 mi. FA—A-640 (2) and SACP-355-A (2), Sumter Co.;

Ala.—**G & R Coal Co.**, 651 Sherman St., Decatur, Ala., LB $262,063, grading, drainage, bit. tr. and bridge culverts 6.995 mi. FA—S-567 (4), Cullman Co.; LB $134,333, grading, drainage, bit. tr. 4.891 mi. FA—S-718 (2), Morgan Co.;

Ala.—**Walton Constr. Co., Inc.**, Box 863, Mobile, Ala. LB $139,686, Proposal "A", roadway, grading, drainage, bit. tr. 8.056 mi. FA—S-721 (1), Washington Co. Cancelled bids to have been opened June 17, base, bit. tr. and bridge 1.438 mi. FA—S-247 (1), Coffee Co. Bids June 17. CD 6/3.

(Continued on page 66)

### PROJECTS COVERED

#### By Size

**Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.**

#### By Regions & Classes of Construction

**(In order of Listing)**

**BIDS ASKED**
**LOW BIDDERS**
**CONTRACTS AWARDED**

**New England**
**Middle Atlantic**
**South**
**Middle West**
**West of Mississippi**
**Far West**

**PROPOSED WORK**
**Water Supply**
**Sewers, Waste Disposal**
**Bridges**
**Streets & Roads**
**Earthwork, Waterways**
**Public Buildings**
**Mass Housing**
**Commercial Buildings**
**Industrial Buildings**
**Unclassified**

#### In These Stages

**PROPOSED WORK: Before and including appointment of engineers or architects.**
**BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.**

**LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.**

**CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.**

**CD dates shown are of Construction Daily issue in which last previous report was published.**

#### Symbols and Abbreviations Include:

**† Federal Government**
**▲ Project of $1,000,000 or over.**
**ENR Engineering News-Record**
**CD Construction Daily**

**For additional reports see Construction Daily.**

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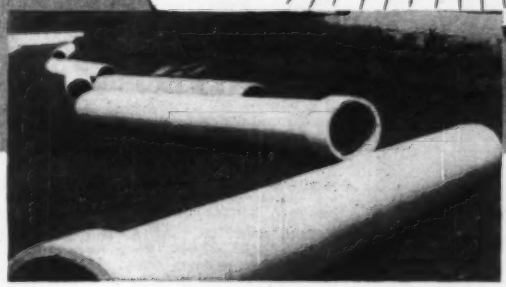
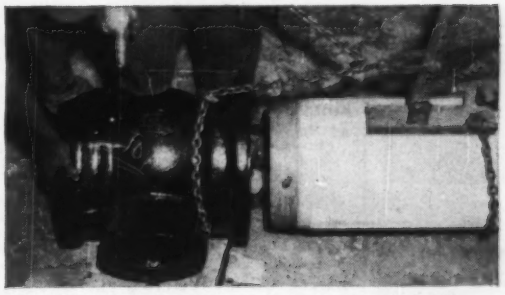
You can be sure that he did it with Transite® Pressure Pipe and the NEW Ring-Tite® Coupling



**Easy handling, fast assembly**

**Installation follows digger closely**



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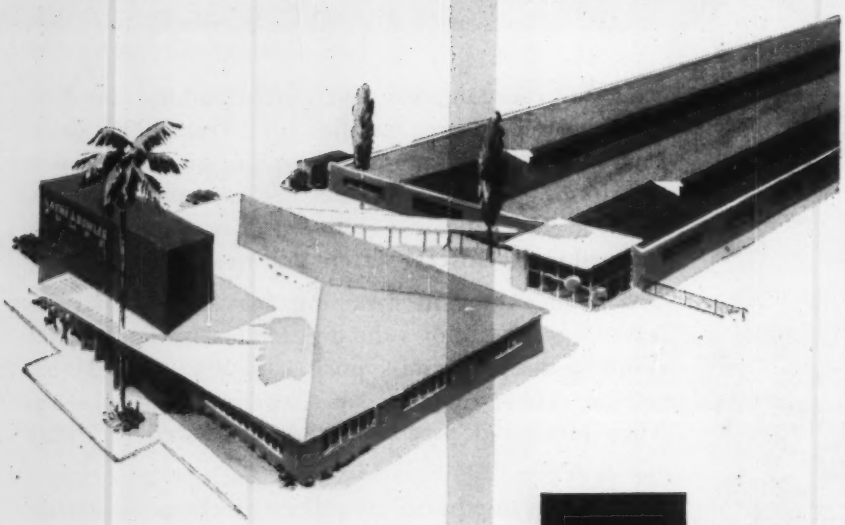
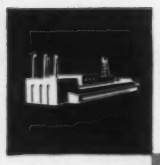
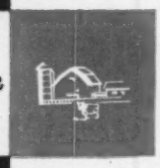
More than 100,000 satisfied vertical pump users agree there's no pump like Verti-Line for low first cost, economical operation, and negligible maintenance.





*in the factory*

*on the farm*



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(Continued from page 64)

▲† **Harbert Constr. Corp.**, 2208 8th Ave. S., Birmingham, Ala., LB **$1,712,008** (4 bidders), 2,600 ft. concrete exten. to southeast-northwest runway; LB **$112,120,** petroleum fuel storage area, Brookley Air Force Base, MOBILE, ALA. U. S. Eng., P.O. Box 1169, Mobile 7, Ala. Bids June 21. CD 5/25; **Wright Contrg. Co.**, 504 25th Ave., Columbus, Ga. LB **$1,707,901** under alt. proj. to const. asphalt exten. except for last 1,000 ft. which would be of concrete (Mobile, Ala.).

### BUILDINGS—LB & CA

▲ **Daniel Constr. Co.**, 429 N. Main St., Greenville, S. C., CA Est. **$1,000,000.** 100,000 sq. ft. mfg. PLANT, PICKENS, S. C. Sangamo Electric Co., 1301 N. 11 St., Springfield, Ill.

▲ **Fuller & Peacock, Inc.**, 3182 Peachtree Rd. N.E., Atlanta, Ga., CA **$1,296,125,** Newton Elementary and high SCHOOL for colored; Covington Elementary SCHOOL; Washington St. Elementary SCHOOL addn.; Livingston Elementary SCHOOL, Mansfield Elementary SCHOOL, Palmer-Stone Elementary SCHOOL; Newton County High SCHOOL addn., East Newton Elementary SCHOOL, all in Newton Co., COVINGTON, Ga. State School Bldg. Auth., Kemper Bldg., 41 Exchange Pl. S.E., Atlanta, Ga. Bids May 17. CD 5/19, under LB.

▲ **Louis Briggs Constr. Co.**, Box 570, Macon, Ga., LB **$1,054,900,** Mount Olive Elementary SCHOOL; Smith Elementary SCHOOL; Antioch Elementary SCHOOL; Jeffersonville Elementary and High SCHOOL; Jeffersonville Vocational SCHOOL, JEFFERSONVILLE, GA. State School Bldg. Auth., 41 Exchange Pl. S.E., Atlanta, Ga. Bids June 23. CD 5/10.

## MIDDLE WEST

### HEAVY CONSTRUCTION—LB & CA

▲ **Gjellefald Assocs. Inc.**, Forest City, Iowa, CA **$1,079,404,** sewage treatment plant, sewers exten., pumping station, 2 lift stations, MATTOON, ILL. City, Mattoon, Ill. Awarded June 16. CD 6/22, under CA. (Correction—contractor's name.)

### BUILDINGS—LB & CA

▲ **J & E Warm Co.**, 2335 Florence Ave., Cincinnati, O. CA Est. **$1,000,000.** 55,000 sq. ft. mfg. PLANT and Office on Glendale-Milford Rd., EVENDALE, O. Staples Tool Co., 2851 Massachusetts Ave., Cincinnati, O. Awarded June 21.

▲ **Scatterday & Cunningham Constr. Co.**, Bridgeport, Ind. Owner Builds. **$1,500,000.** HOMES for 1955 and 1956, BRIDGEPORT, IND .

▲ **Sumner Sollitt Co.**, 307 N. Michigan St., Chicago 1, Ill., CA **$3,327,000,** Henry Horner HOMES, incl. five 7-story apartment bldgs., 325-units, CHICAGO, ILL. Chicago Housing Auth., 608 S. Dearborn St., Chicago 5, Ill. Bids June 7, awarded June 17. CD 6/16 under LB.

▲ **Peterson & Peterson,** 239 North West Hy., Park Ridge, Ill. Own Forces. **$1,000,000.** 30 HOMES, PARK RIDGE, ILL.

▲ **Brooks & Son,** 5540 N. Marmora St., Chicago, Ill. Own Forces. **$2,250,000.** 150 HOMES, SCHILLER PARK, ILL.

▲ **Albert Sherman & Assocs.**, 3034 Devon St., Chicago, Ill. Own Forces. **$1,800,000.** 60 HOMES, SKOKIE, ILL.

**George H. Glover, Inc.**, 25601 Coolidge Hwy., Oak Park, Mich., Owner Builds **$900,000,** Thornwood Subdivision, 57 brick ranch HOMES, BIRMINGHAM MICH.

▲ **George H. Pastor & Sons,** 19971 James Couzens St., Detroit, Mich., Owner Builds **$1,700,000,** 115 brick ranch HOMES, Valley Park subdivision, DEARBORN, MICH.

▲ **Madison Construction Co.**, 600 Woodward St., Detroit, Mich. Owner Builds. **$6,000,000,** 500 single brick houses, EAST DETROIT, MICH.

**Baker-VanderVeen-De Young-Kraker Co.**, 3640 Clyde Park, S. W. Grand Rapids, CA **$964,000,** general contract, Riverside High SCHOOL, GRAND RAPIDS, MICH City, Bd. of Educ., Grand Rapids, Mich. Warner Holmes Co., 2200 Mich. National Twr., Lansing, Mich., archt.

▲ **Garfield Building Co.**, 18749 Ecorese, Allen Park, Mich., **$1,500,000** 126 brick HOMES, 14-mile Rd and Van Dyke Section, STERLING, MICH. Carl R. Sams Co., Inc., 1256 Penobscot Bldg., Detroit, Mich.

## WEST OF MISSISSIPPI

### BUILDINGS—BA

▲† **Mo., Weldon Springs**—ADMINISTRATION BLDG., Etc.—BA 8/1—Fruin-Colon Contg. Co., and Utah Constr. Co. (joint ventures), P. O. Box 522, St. Charles Mo., prime construction contractor for Atomic Energy Commission, Oak Ridge, Tenn., 2 story, concrete block 37,900 sq. ft. administration bldg.; 1 story concrete block, 52,800 sq. ft. service bldg.; 1 story, concrete block 69,000 sq. ft. maintenance and stores bldg.; 2,800 sq. ft. paint shop, $2,000,000. CD 12/29/54, under CA.

### HEAVY CONSTRUCTION—LB & CA

▲† **F. R. Comb Co.**, 2901 Aldrich Ave. South, Minneapolis, Minn. CA **$1,317,834.** Schedule E, alert, redineess and maintenance hangars, concrete apron, paving, utilities, Glasgow Air Force Base, GLASGOW, MONT. U. S. Eng., Bldg. 602, City-County Airport, Walla Walla, Wash. CD 6/10, under LB.

### BUILDINGS—LB & CA

▲ **Alvin Siteman, Inc.**, 7603 Forsyth Blvd., Clayton 24, Mo. CA est. **$1,500,000.** 5 story, bsmnt., brick, steel, concrete OFFICE southwest corner Corondelet and Bemiston Ave. to known as Siteman Bldg., CLAYTON

(ST. LOUIS 5 P. O.), MO. Siteman-Adreon, Inc., 7603 Forsyth Blvd., Clayton 24, Mo. Cay G. Wienel, 3837 West Pine Blvd., St. Louis 8, Mo., archt. CD 9/13/54.

▲ **R. K. and A. Jones, Inc.**, 7129 Olive Blvd., University 24, Mo. Owner Builds. **$2,000,000.** Florissant Meadows SHOPPING CENTER incl. 30,000 sq. ft. junior department store, 15,000 sq. ft. food store, variety store, drug store, shoe store, 20 other stores, parking area, 15 acre tract Hy. 140 Lindbergh Blvd. and Lindsay Lane, FLORISSANT, MO. Arthur B. Rathert, 3608 S Grand Blvd., St. Louis 18, Mo., archt.

▲ **Melvin H. Glick & Co.**, 44 N. Brentwood Blvd., Clayton 5, Mo. Owner Builds. **$1,500,000.** 120 addnl. HOUSES on west side of Hilltop Drive 2 blocks north of Olive St. Rd. in Arrowhead Park subdivision, ST. LOUIS COUNTY, MO.

▲ **M. W. Bennett & Assoc.**, 110 W. 13 Ave., Denver, Colo. Owner Builds, **$2,000,000.** 160 brick RESIDENCES, BRIGHTON, COLO.

## FAR WEST

### HEAVY CONSTRUCTION—LB & CA

† **J. P. Hopkins**, Mercer Island, Wash. LB., **$728,496** est. $620,498, clearing, roads, hardstands, 30x90 ft. messhall, 32x175 ft. barracks and BOQ, 32x125 ft. administration bldg., for military installation, Poulsbo, Eng 45-108-55-235. WASHINGTON U. S. Eng., 4735 E. Marginal Way, Seattle 4, Wash. Bids June 16. CD 5/26.

▲ **CALIFORNIA**—State Div. Hys., 1120 N St., Sacramento,

Calif.—**Dan Caputo Co. and Ed Keeble**, 2711 Moorpark St., San Jose, Calif., CA **$1,156,675**, grade surf. 1.9 mi. U. S. 101 between Waldo and 0.3 mi. north of Alto, welded plate girder bridge and install highway lighting, Marin Co.;

Calif.—**Gene Richards, Inc., D. M. Underdown and Gene Richards**, 355 Thorne Ave., Fresno, Calif., CA **$1,253,555**, grading, paving 1.8 mi. U. S. 99 between San Joaquin St. and West Ave., six bridges, Fresno Co. Bids June 8. CD 6/14 under LB.

### BUILDINGS—LB & CA

▲ **Blaw-Knox Corp.**, Farmers Bank Bldg., Pittsburgh, Pa., CA est. **$18-$19,000,000.** anhydrous ammonia PLANT, PROVO, UTAH. Columbia Geneva Steel Div., U. S. Steel Corp., Russ Bldg., San Francisco, Calif. CD 12/15/54.

▲ **The Fluor Corp. Ltd.**, 2500 Atlantic St., Los Angeles, Calif., CA **$3,000,000** design and construct, steel CATALYTIC ULTRA-FORMER SALT LAKE CITY, UTAH. Utah Oil Refining Co., Utah Oil Bldg., Salt Lake City, Utah.

## CANADA

### BUILDINGS—BA

▲ **N. S., Halifax**—HOUSING—BA 7/12—Central Mortgage & Housing Corp., 1032 Gottingen St., 100-unit (75-bldg.) housing program for married personnel, Naval Air Base, near here. $1,000,000. Plans deposit $100. C. F. Emms, c/o owner, asst. regional constr. engr.

### BUILDINGS—LB & CA

**Huron Constr. Co.**, King St., Chatham, Ont., Owner Builds, **$770,000.** 55 brick, frame DWELLINGS, North Oxford St., London Twp., ARVA, ONT.

**J. Euclide Perron, Ltd.**, 37 Jacques Cartier St., E., Chicoutimi, Que., CA **$800,000.** 3-story 46x180 ft. bsmnt., BISHOPRIC, CHICOUTIMI, QUE. La Corporation Episcopale, Chicoutimi, Que., Sylvio Brassard, 39 Moncton Ave., Quebec City, Que., archt. Awarded June 17.

▲ **Foundation Co. of Canada Ltd.**, 1500 Sherbrooke St. W., Montreal, Que., LB, **$1,250,000.** PLANT, POINTE AUX TREMBLES, QUE. Canadian International Paper Co. Ltd., Sun Life Bldg. Montreal, Que. P. F. Goodfellow, 1117 St. Catherine St. W., Montreal, archt. W. Bennet, c/o owner, engr.

## ALASKA

### HEAVY CONSTRUCTION—LB & CA

▲† **J. A. Jones Constr. Co.**, Medical Arts Bldg., Seattle, Wash., LB **$3,968,430**, est. $3,582,255, Air Force installation, Inv. 55-31. SITKINAK ISLAND, ALASKA. U. S. Eng., 4735 E. Marginal Way, Seattle, Wash. Bids June 23. CD 5/26.

## LATIN AMERICA

### HEAVY CONSTRUCTION—LB & CA

▲ **Aeropuertos y Caminos, S. A.**, c/o owner, CA **$1,200,000.** commercial airport, MATAMOROS, MEXICO. Mexican Govt., Sria. de Comunication y Obras Publicas, Mexico City, Mexico. Awarded June 21. CD 8/13/53.

# PROPOSED PROJECTS

## WATER SUPPLY

▲ **Colo., Denver**—Bd. Water Comrs., City and County Bldg. $75,000,000 bond election August 9, tunnel, filter plant addn., new filter plant, two reservoirs. **$100,926,000.** Alvord Burdick & Howson, 20 N. Wacker Dr., Chicago, Ill. consult. engrs. CD 5/3.

▲ **O., Cleveland**—City, Dpt. P. Utilities, Emil J. Crown, dir., City Hall, installation of water mains, 3 m.g. underground reservoir and water pumping station for proposed Veterans Admin. Hospital at Miller and Brecksville Rds., Brecksville, **$2,000,000.** Frank J. Schwemler, comr. div. water. CD 1/27/54.


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This 18-inch line of Naylor Spiralweld pipe was installed to place more than 500,000 cubic yards of sand and gravel for a highway fill. The light weight of this distinctive pipe simplified installation at the new road level. At the same time, the extra strength and safety built into the Naylor structure assured the trouble-free delivery of the sand and gravel required.

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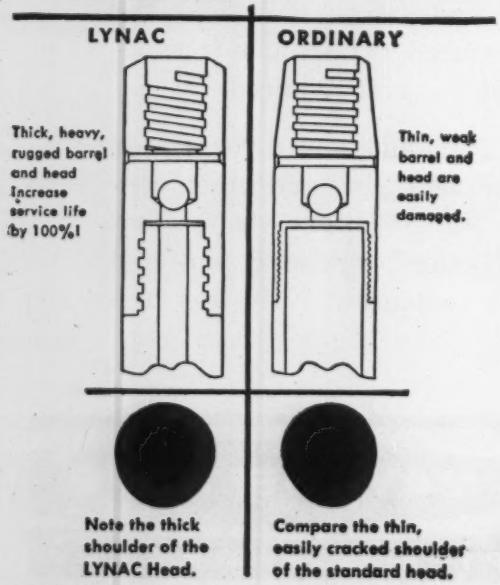
**HERE'S WHY**


LYNAC
ORDINARY
Thick, heavy, rugged barrel and head increase service life by 100%!
Thin, weak barrel and head are easily damaged.
Note the thick shoulder of the LYNAC Head.
Compare the thin, easily cracked shoulder of the standard head.

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**Acker engineers have done it again! By improving the design and construction of the standard split tube samplers, Acker engineers increased the service life of their new LYNAC Sampler by over 100%!**

**Look over the drawings at the left and you'll see why. Then, write for literature describing Acker's new LYNAC Sampler.**

**ASK FOR COMPLETE CATALOG ON SOIL SAMPLING**

**ACKER DRILL CO., Inc.**
**SCRANTON 3, PA., U.S.A.**

▲ **Wash., Tacoma**—City, City Hall, 100 m.g. reservoir at McMillan. $1,500,000. W. A. Kunig, c/o owner, water supt.

## BRIDGES

▲ **MONTANA**—State Hy. Comn., Helena,
**Fergus Co.**—bridge over Missouri River near head of Fort Peck Reservoir and roadway on both sides of bridge, $4,200,000. Bids in July.
**Stillwater Co.**—steel, concrete, bridge over Yellowstone River on Columbus-Abasarokee Hy., $570,000.

▲ **O., Cleveland**—City, Dpt. P. Properties, Louis L. Drasler, dir., City Hall, bridge over Cuyahoga River to replace Jefferson Ave. Bridge, $3,000,000. John C. Wenrick, city engr. CD 5/24/54.

## STREETS AND ROADS

▲ **ARIZONA**—State Hy. Dpt., Phoenix,
**Apache Co.**—county primary systems, $170,000. Route 260 (alternate) $6,000.
Route 273, $6,000.
**Cochise, Graham, Greenlee and Apache Counties**—Route 66, $330,000.
**Cochise Co.**—county primary sys., $100,000. county primary sys., $200,000.
Route 90, $230,000.
Route 92, $184,000.
Route 186, $150,000.
Route 190, $4,000.
Route 65, $50,000.
**Gila, Graham and Greenlee Counties**—Route 70, $2,035,000.
**Gila Co.**—county primary sys $75,000.
Route 88, $96,000.
**Maricopa and Pima Counties**—Route 85, $33,000.
**Maricopa, Pinal and Pima Counties**—Route 84, $1,380,000.
**Maricopa and Yavapai Counties**—Route 69, $1,036,000.
**Maricopa Co.**—county primary sys. $1,230,000.
**Mohave and Yavapai, Coconino, Navajo and Apache Counties**—US 66, $1,515,000.
**Mohave and Yavapai Counties**—Route 93, $555,000.
**Navajo and Apache Counties**—Route 73, $72,000.
Route 260, $80 000.
**Navajo Co.**—Route 160, $50,000.
county primary sys., $90,000.
**Pima and Cochise Counties**—Route 86, $710,000.
**Pima Co.**—Route 83, $100,000.
county primary sys., $730,000.
**Pinal, Gila and Navajo Counties**—Route 77, $824,000.
**Pinal, Maricopa Counties**—Route 87, $126,000.
**Pinal Co.**—Route 177, $17,000.
Route 387, $15,000.
county primary sys., $170,000.
**Santa Cruz, Pima, Pinal and Yavapsi Counties**—Route 89, $1,455,000.
**Santa Cruz Co.**—Route 82, $260,000.
**Yavapai and Coconino Counties**—Route 89 (alternate) $15,000.
**Yavapai Co.**—Route 279, $50,000.
Route 71, $30,000.
Route 79, $750,000.
county primary sys., $250,000.
**Yuma, Maricopa, Pima and Cochise Counties**—Route 80, $4,043,000.
**Yuma, Maricopa, Pinal, Gila and Navajo Counties**—U. S. 60, $943,000.
**Yuma Co.**—Route 72, $16 000.
Route 95—Yuma, $134,000.

▲ **O., Cleveland**—City, Dpt. P. Service, Louis L. Drasler, dir., City Hall; exten. of Lakeland Freeway from E. 136 St. to city limits at E. 200 St. with 6-lane divided hy., $6,000,000-$7,000,000. Hargett-Vanda & Barker, 7016 Euclid Ave., consult. engrs., John C. Wenrick, city engr. CD 3/29/54.

## LATIN AMERICA

▲ **Mexico, Monterrey**—FACTORY—Andres Sada, domicilio conocido, Monterrey, plans cellophane paper factory. $1,500,000.

## PUBLIC BUILDINGS

▲ **Calif., Santa Ana** — SCHOOLS — Orange Unified School Dist., Santa Ana, voted $1,000.000 bonds elementary school district; $950,000 for high school addns.

▲ **Calif., Torrance**—SCHOOL—Torrance Unified School Dist., 2335 Plaza Del Amo, plans by George F. Schreiber, 5545 E. Washington Blvd., Los Angeles, South Torrance High School $1,750,000. CD 6/14.

▲ **Conn., Bristol** — HIGH SCHOOL addn. — City, c/o School Bldg. Comn., City Hall, plans by Harold A. Hayden, 175 Main St., high school addn. $2,500,000. CD 12/29.

▲ **Conn., Hartford**—HIGH SCHOOL—City, c/o Bd. Educ., 249 High St., plans by Carl J. Malmfeldt & Assoc., 36 Pearl St., high school modernization and renovation, Broad St. $1,000,000. CD 12/19/47.

▲ **Mass., Sharon**—SCHOOL—Town Bldg. Comn., plans by Anderson-Nichols & Co., 150 Causeway., Boston, high school, $2,000,000. (Correction—cost). CD 3/21.

▲ **Mich., Harper Woods** — SCHOOL — City, Marie T. Baron, city clk., junior high school, $1,500,000.

▲ **Mich., Holland**—SCHOOL—City, Bd. Educ., John Essenberg, secy., high school, $3,500,000.

▲ **Mich., Mount Pleasant**—CUSTODIAL BLDGS., etc.—State, A. N. Langius, dir., State Bldg. Dpt., Lewis Cass Bldg., Lansing, plans by Roger Allen & Assoc., 1126 McKay Tower, Grand Rapids, Zone 2, two custodial bldgs., $1,100,000; nursery, $1,225,000; administration bldg., $900,000; power plant, laundry, utilities, $950,000; service bldg., $700,000, Mount Pleasant State Home & Training School. CD 7/29/53.

▲ **Minn., Minneapolis**—HOUSING—Minneapolis Housing and Redevelopment Auth., A. C. Godward, exec. dir.,

Metropolitan Bldg., plans by Armstrong & Schlichting, 2722 Park Ave., 386 housing units Glenwood redevelopment area south of Olson Hy. in Fremont Ave., Girard Ave. area, $5,000,000. CD 7/24/52.

▲ **Mo., Clayton** — CIVIL COURTS BLDG. — St. Louis County, c/o Luman F. Matthews, co. supvr., Court House, Zone 5, plans by Marcel Boulicault, Ambassador Bldg., 411 N. 7 St., St. Louis, Zone 1, 7 story civil courts bldg. with 3 level parking garage below it, block bounded by Central, Meramec, Bonhomme and Carondelet Aves., $7,562,000. CD 4/7/50.

▲ **Mo., Independence**—LIGHT PLANT—City, City Hall, $10,000,000 bond election Aug 16, light plant and extensions. Black & Veatch, 4706 Broadway, Kansas City, Mo., consult. engrs. CD 10/13/53.

▲ **Neb., Omaha** — PARKING PROJ. — Omaha Parking Auth., City Hall, 2-deck 250x350 ft. underground public parking proj., $1,000,000. E. W. Woodbridge, city engr. Wm. Green, county engr.

▲ **N. Y., Brooklyn**—SCHOOL—Bureau Constr., Bd. Educ. 42-15 Crescent St., Long Island City, Zone 1, junior high school 50 addn., South Third St. and Driggs Ave., Proj. E-842, $2,000,000.

▲ **N. Y., Brooklyn**—HOUSING—New York City Housing Auth., 299 Broadway, New York, Zone 7, housing proj. for 1,550 families on tract bounded by Linden Blvd., Elderts Lane, Stanley Ave. and Crescent St., Proj. NY-5-35, $20,000,000.

▲ **N. Y., Mariners Harbor**—SCHOOL—Bureau Constr., Bd. Educ., 42-15 Crescent St., Long Island City, Zone 1, junior high school 51 vicinity Hooker Place, Richmond Boro, E-712, $2,400,000.

▲ **N. Y., New York**—SCHOOL—Bureau Constr., Bd. Educ., 42-15 Crescent St., Long Island City, Zone 1, junior high school 22 at Stanton and Sheriff Sts., Proj. E-917, $3,000,000.

▲ **N. Y., New York**—LIBRARY, etc—Bd. Higher Educ., 695 Park Ave., Zone 21, plans by Marcel Breuer, 113 E. 37 St., Zone 16, classroom, library, administration bldg. for Bronx Division, Hunter College, Proj. HN-104, $3,000,000.

▲ **N. Y., New York**—COURTS BLDG.—Dpt. P. Wks., Municipal Bldg., Zone 7, plans by William Lescaze and Matthew W. DelGoudio, 211 E. 48 St., Zone 17, city and municipal courts bldg., Center and White Sts., Proj. PW-84, $13,000,000. CD 10/16/46.

▲ **N. Y., New York**—HOUSING—New York City Housing Auth., 299 Broadway, Zone 7, housing proj. for 1,600 familes in area bounded by E. 169 St., Park Ave., E. 171 St. and Third Ave., Bronx Boro, Proj. NY-5-37, $24,000,000.

▲ **N. Y., New York**—HOUSING—New York City Housing Auth., 299 Broadway, Zone 7, housing proj. for 500 families on tract bounded by E. 163 St., Tinton Ave., E. 161 St. and Jackson Ave., Bronx Boro, Proj. NY-5-31, $7,875,000.

▲ **N. Y., New York**—HOUSING—New York City Housing Auth., 299 Broadway, Zone 7, Samuel Gompers Houses for 480 families on site bounded by Delancey, Pitt, Rivington and Sheriff Sts., Manhattan Boro, Proj. NY-5-32, $7,000,000. CD 1/5/45.

▲ **N. Y., New York**—HOUSING—New York City Housing Auth., 299 Broadway, Zone 7, Clason Part II Houses for 1,100 families on tract bounded by Brockner Blvd., Taylor Ave., Lafayette Ave., Soundview Ave. and Rosedale Ave., Bronx Boro, Proj. NY-5-36, $14,250,000.

▲ **N. Y., New York**—HOUSING—New York City Housing Auth., 299 Broadway, Zone 7, housing proj. for 750 families on site bounded by Park Ave., Madison Ave., East 106 St. and East 110 St., Manhattan Boro, Proj. NY-5-33, $10,000,000. CD 1/4/45.

▲ **N. Y., Oceanside**—SCHOOLS—Union Free School Dist. 11, elementary school addns. on Oceanside Pkwy., $597,296; elementary school addns., Oceanside Rd., $555,619. Proposition approved on June 14.

▲ **N. Y., Roslyn**—SCHOOL—School Dist. 3, elementary school on 15 acre plot in East Hills, east of Glen Cove Rd., $1,600,000.

▲ **O., Cleveland**—OUT PATIENT—City, Dpt. P. Properties, City Hall, 601 Lakeside Ave. N. E., plans by Anthony J. Gattozzi, city archt., c/o owner, 5 story, brick, concrete, steel, T-shaped out patient bldg. at City Hospital, 3395 Scranton Rd., $3,400,000. Small, Smith & Reeb, 1010 Euclid Ave., consult. engrs. CD 11/5/54.

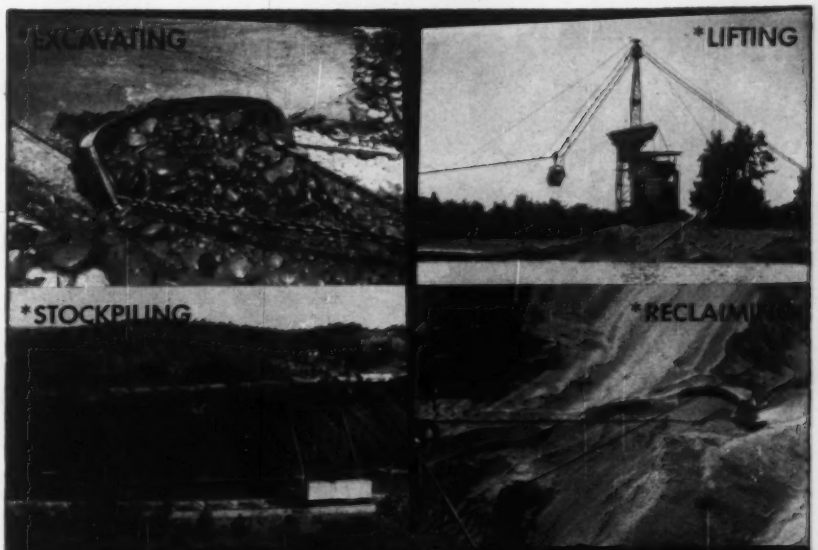
▲† **Pa., Phila.**—POST OFFICE—Post Office Dpt., 30 and Market Sts., post office annex, $6,000,000. CD 4/28/49.

▲ **Tex., Tyler**—HOSPITAL—Bd. for Texas State Hospitals and Special Schools, 45 and Lamar Sts., Austin, plans by Broad & Nelson, 918 Reserve Loan Life Bldg., Dallas, 100,000 sq. ft. 340-bed concrete frame hospital for East Texas Tuberculosis Hospital, $1,800,000. Walter C. Moore, c/o owner, supv. archt. Landauer & Shafer, 4801 Lemmon St., Edward L. Wilson, Jr., Merc.-Commercial Bldg., Dallas, consult. engrs. CD 1/20/54.

▲ **W. Va., Morgantown**—HOSPITAL—West Virginia University Bd. of Governors, Morgantown, plans by C. E. Silling & Assocs., Masonic Bldg., Charleston, 500-bed hospital to be built in connection with new Medical School. $11,000,000. Plans will be ready about mid-Summer of 1956. CD 6/4/54.

## COMMERCIAL BUILDINGS

▲ **Calif., Anaheim** — MOTEL UNITS — Manley-Kuhns Corp., 512 N. La Brea Ave., Los Angeles, plans by Roy M. Watkins, c/o Orange County Drafting Service,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**Lower left:** 8-cu. yd. scraper machine is stockpiling 300 tons per hour, over an arc of 450 feet radius in a 225,000-sq. ft. storage area. Tail tower is remotely controlled from elevated cab above hopper.

**Upper right:** 2-cu. yd. Slackline Cableway spanning an average of 450 feet, lifts and conveys from an underwater deposit to a high hopper at the rate of 75 tph.

**Lower right:** 2-cu. yd. Crescent, working between a fixed point head and movable tail tower, reclaims phosphate from all points about the periphery of a roughly semi-circular storage area.

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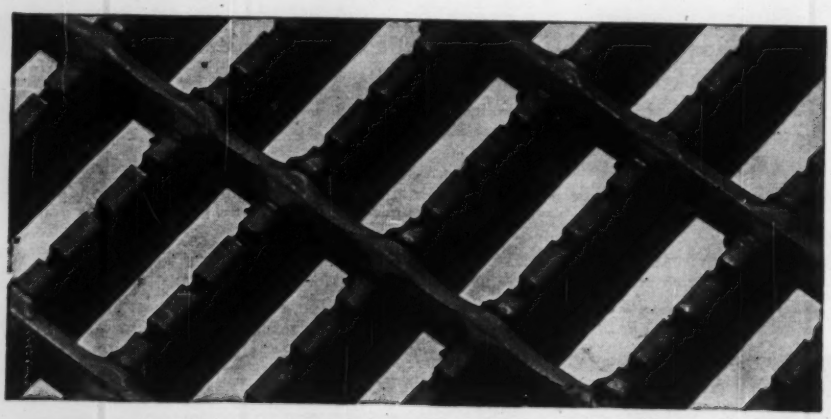

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3210 W. Coast Hwy., Newport Beach, 1,200 motel units near Disneyland $3,000,000.

▲ Calif., LaHabra—DWELLINGS—LaHabra Hills, c/o Wm. M. Bray, archt., 962 N. La Cienega Blvd., Los Angeles, 181 frame, stucco dwellings, $1,750,000.

▲ Calif., Lemon Grove—SHOPPING CENTER—Michael C. Birncrant, 619 Sarbonne Rd., Los Angeles, Zone 24, plans by Albert C. Martin & Assoc., 333 S. Beaudry Ave., Los Angeles Zone 17, 60-store shopping center, $35,000,000.

▲ Colo., Denver — OFFICE — John D. and Clint W. Murchison, 1201 Main St., Dallas, Tex., plans by Raymond H. Ervin, archt.-engr., 1500 Denver Club Bldg., 15-32 story office bldg. with parking facilities. $10,000,000.

▲ Conn., Middletown—DORMITORIES—Wesleyan University, Bd. Trustees, Middletown, plans by Charles H. Warner, Jr. and Brown, Lawford & Forbes, 2 W. 54 St., New York, N. Y., 3 dormitories, Foss Hill north of main campus. $2,000,000. Clark & Rapuano, 145 E. 32 St., New York, N. Y. landscape archts. CD 1/30/53.

▲ Ill., Chicago—APARTMENT—Irving Berkson, 111 W. Washington St., Zone 2, plans by Stuermer, Hausner & Mascai, 140 N. Dearborn St., Zone 2, 24-story 248-unit apartment, corner Lakeshore Dr. and Division St. $3,000,000.

▲ Mo., St. Louis—OFFICE AND STORES—Jacob J. Frohmann, 1 Old Westbury Lane, Webster Groves, Zone 19, plans by Arthur B. Rathert, 3608 S. Grand Ave., St. Louis 18, Mo. 4 story, glass-walled office and stores, Hampton and Sutherlan Aves., Southampton Bldg., $1,000,000.

▲ Mich., Detroit — COMMUNITY CENTER — United Jewish Charities, Inc., 163 Madison St., 98,000 sq. ft. community center incl. swimming pool, gymnasium, administration, etc. 12 acre site, Curtis and Meyers Sts., $1,500,000.

▲ Nev., Las Vegas—HOTEL—Charles Cox & Assocs., 306 N. 9th St., plans by Charles Cox & Assoc., 306 N. 9th St., 14-story hotel. $27,000,000. Oboler & Clark, 927 41st St., Miami Beach, Fla., engrs.

▲ N. Y., Brooklyn—APARTMENT—Barlut Building Corp., 782 E. 93 St., New York, plans by Seeliq & Finkelstein, 153 Pierrepont St., Zone 2, 6 story apartment at 3056 Ocean Ave., $1,520,000.

▲ N. Y., New York—APARTMENT—Hausin Enterprises, Inc., 22 W. 48 St., Zone 19, plans by Sylvan Blen, 33 W. 46 St., Zone 19, 17 story apartment at 61-75 East End Ave., $2,500,000.

▲ O., Perrysburg — HOUSING — Commercial Builders, Inc., 1003 Louisiana St., 82 homes in Gorman View addn. adjacent to Country Charm Shopping Center Incl. sanitary sewers, paved streets, water lines, utilities, etc., $1,200,000.

▲ Pa., Bryn Mawr—APARTMENT—John A. Scott, 648 Drexel Ave., Drexel Hill, 322 units apartment, Bryn Mawr Ave., Mable Thomas tract, $2,500,000.

▲ Pa., Churchville — RESIDENTIAL DEVELOPMENT — Harry A. Doyle, 746 Cedar Rd., Cheltenham, residential development, Upper Southampton Twp., $4,500,000.

▲ Wash., Issaquah—HOUSES—Century Builders, Inc., 900 12th Ave., Seattle, 120 houses. $1,800,000.

▲ Wash., Spokane—DEPARTMENT STORE—Allied Stores, Corp., 401 5th Ave., New York, N. Y. plans by J. Graham & Co., 1426 5 Ave., Seattle. Bon Marche-Palace department store addn. $2,000,000. Bids this summer.

## INDUSTRIAL BUILDINGS

▲ Ala., LeMoyne—PLANT—Consolidated Chemicals Industries, Inc., Esperson Bldg., Houston, Tex. sulphuric acid plant. $2,000,000. To go ahead 1955.

▲ Calif., Oroville—REPAIR SHOP—Western Pacific R. R. Co. F. R. Woolford, Ch. Engr., 526 Mission St., San Francisco, diesel engine repair shop. $1,500,000.

▲ Del., Wilmington—LABORATORY—Hercules Powder Co., Delaware Trust Bldg., Wilmington, plans by Voorhees Walker Foley & Smith, 101 Park Ave., New York, N. Y., laboratory, $1,000,000. Bids in July or August. CD 6/24/52.

▲ O., Cleveland — PLANT — Ford Motor Co., 3000 Schaefer St., Dearborn, Mich., 300,000 sq. ft. engine plant No. 2 and 70,000 sq. ft. foundry addns., Brook Park, $9,000,000.

▲ O., Paulding—PLANT—Consolidated Cement Co., 111 W. Monroe St., Chicago 3, Ill. Portland Cement plant, $5,000,000.

▲ O., Sharonville—PLANT—Ford Motor Co., 3000 Schaefer St., Dearborn, Mich., automatic transmission plant, Sharon and Mosteller Rds.

▲ Wash., Tacoma—PLANT—Kaiser Aluminum & Chemical Corp., Kaiser Bldg., Oakland, Calif., aluminum reduction plant expans. $2,100,000.

▲ Ont., Hamilton—COKE OVENS—Dominion Foundries & Steel Ltd., Depew St., plans by Prack & Prack, 310 Main St., E., second bank of coke ovens on Bay Front, 4-acre site. $3,000,000.

## UNCLASSIFIED

▲ Alabama—HYDRO DAMS—Warrior River Electric Cooperative, Oneonta, hydro dams at Blountsville and Hayden on Locust Fork, Black River. $30,000,000. Work to start March 1956.

▲ Ill., East St. Louis—SWIMMING POOLS—East St. Louis Park Dist., Jerry J. Donovan, secy., 929 Missouri Ave., swimming pools, at Jones and Lincoln Parks, development three 10 acre parts in outer State St., Canteen and Centerville areas and imprvs. to existing parks, etc., $2,000,000.

# Bids—Low Bids—Contracts—Second Section

## NEW ENGLAND

### HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

STREETS AND ROADS

July 12 Massachusetts

### HEAVY CONSTRUCTION—LB & CA

▲ CONNECTICUT—State Hy. Comn., State Office Bldg., Hartford,

Mariani Constr. Co., 222 Forbes Ave., New Haven, Conn., CA, $1,129,051. grading, drainage, rein.-con. bridge 182-17 and 182-19, UI 138 (7), UI 138 (8) Contract II, Waterbury. Bids June 2, awarded June 20. CD 6/9, under LB.

† Wexler Constr. Co., 118 Needham St., Newton Highlands 51, Mass. LB $891,100, alt. brick veneer exterior, $1,006,300, airmen's dormitory, mess, Dow Air Force Base, ENG-19-016-55-156, BANGOR, ME. U. S. Eng. 857 Commonwealth Ave., Boston, Mass. Bids June 23. CD 6/15.

### BUILDINGS—LB & CA

▲ D. A. Sullivan & Sons, Inc., 82 North St., Northampton, Mass. CA Est. $1,500,000. STUDENT UNION BLDG., AMHERST, MASS. University of Mass., Alumni Bldg. Assoc., Amherst, Mass. CD 6/27, under LB.

▲ George A. Fuller Co., 11 Beacon St., Boston, Mass., CA Approx. $3,000,000. Karl Taylor Compton LABORATORY, campus, west of swimming pool, CAMBRIDGE, MASS. Massachusetts Institute of Technology, 77 Mass. Ave., Cambridge, Mass. Syska & Hennessy, 144 E. 39 St., New York, N. Y., mech. engrs. Bids June 14. CD 5/27.

▲ Jacet Constr. Corp., 268 Elm St., Cambridge, Mass. CA Est. $2,000,000. RESIDENTIAL DEVELOPMENT, 100 units, NORWOOD, MASS. Westover Home Sales Co., 441 Nichols St., Norwood, Mass. Compton & Pierce, 1430 Mass. Ave., Cambridge, Mass., archts.

▲ Martin Cerel, 18 E. Central St., Natick, Mass. Separate Contracts. $5,000,000. RESIDENTIAL DEVELOPMENT, 400 units, 176 acres, PEABODY, MASS.

▲ David M. Deans, Sabin Drive, Williamstown, Mass. CA Approx. $1,500,000. Stetson HALL addn., WILLIAMSTOWN, MASS. Williams College, J. P. Baxter III, pres., Main St., Williamstown, Mass. Bids June 2. CD 5/27.

## MIDDLE ATLANTIC

### HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

July 21 Maryland, New York — July 21, 22 Pennsylvania

STREETS AND ROADS

July 21 New York — July 21, 22 Pennsylvania

### BUILDINGS—BA

▲ N. Y., Rye—OFFICE, etc.—BA About 9/15—Continental Baking Co., 630 Fifth Ave., New York, Zone 20 (selected list bidders), 2 story office, 1 story laboratory, 18 acre tract between Theall Rd. and Theodore Fremd Ave., $1,000,000. CD 2/3.

### HEAVY CONSTRUCTION—LB & CA

▲ MARYLAND—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,

Williams Constr. Co., Inc., Box 145, Baltimore 20, Md. LB $2,758,549. grading, drainage, surf. Kenilworth Interchange area, Rte. 201, 3.55 mi., incl. 3 steel beam bridges, concrete box culvert, near D. C. Line, Contr. P 724-10-320, Prince George Co. Bids June 14. CD 5/26.

### BUILDINGS—LB & CA

▲ Crown Lea Homes, c/o Bonded Realty Corp., Sunrise Hy., Lindhurst, N. Y. Owner Builds. $2,500,000. 230 HOUSES on tract at Lowell and Sycamore Sts., CENTRAL ISLIP. N. Y.

▲ Brookville Farms Homes, c/o Herman York, archt., 101 Park Ave., New York 17, N. Y. Owner Builds. $1,850,000. 110 HOUSES on 55 acre tract on Pulaski Rd. east of Larkfield Rd., EAST NORTHPORT, N. Y.

▲ Highland Knolls Homes, c/o Samuel Paul, archt., 89-51 164 St., Jamaica, 3, N. Y. Owner Builds. $1,700,000. 100 HOUSES on tract at South Main St. and West First St., FREEPORT, N. Y.

▲ Northwood-at-Islip Homes, c/o Stanley H. Klein, archt., 89-31 161 St., Jamaica, N. Y. Owner Builds. $3,000,000. 250 HOUSES on tract On Sunrise Hy. 4 mi. east of Captree State Parkway, ISLIP, N. Y.

▲ Second Gotham Corp., c/o A. Rollin Caughey, archt., 165 E. 72 St., New York 21, N. Y. Separate Contracts. $1,900,000. 16 story APARTMENT, 430 E. 79 St., NEW YORK, N. Y. CD 5/4.

▲ Clifftop Development Corp., 246 Mamaroneck Ave., White Plains, N. Y. Owner Builds. $2,200,000. 76 HOUSES on 26½ acre tract at Old Kensico and Old Tarrytown, North White Plains, WHITE PLAINS, N. Y.

▲ Navarro Corp., 6219 Broad St., Pittsburgh, Pa. CA $1,872,200. 3½ story, brick, steel HOSPITAL, ALIQUIPPA, PA. Aliquippa Hospital Assoc., Aliquippa, Pa. Bids May 10, awarded June 15. CD 4/21.

▲ United Constr. Co., 1204 Lincoln Ave., Pittsburgh, Pa. CA $2,500,000. 1 story, brick, block SUPERMARKET, 29 stores, CRAFTON, PA. Material Service, Inc., Harry M. Kamin, builder, 1204 Lincoln Ave., Pittsburgh, Pa. J. Fred Triggs, 5777 Broad St., Pittsburgh, Pa., survey engr. CD 4/21/53.

▲ McDonald Engineering Co., 188 W. Randolph St., Chicago, Ill. CA Est. $3,600,000. design and construct cement mfg. PLANT, ROTARY MILLS, MESS BLDGS., BESSEMER, PA. Bessemer Limestone & Cement Co., Wick Bldg., Youngstown, O. CD 5/3.

▲ Branna Constr. Co., Bessemer Bldg., Pittsburgh, Pa. CA $1,860,000. 1 and 2 story, steel HIGH SCHOOL, AUDITORIUM, SHOPS, INDUSTRIAL and VOCATIONAL SECTIONS, NEW KENSINGTON, PA. School Bldg. Auth. of New Kensington, New Kensington, Pa. Bids May 4, awarded June 22. CCD 4/7.

▲ Joseph R. Farrell, 4424 Market St., Phila., Pa. CA $1,958,852. HIGH SCHOOL, Front and Second Sts., Laveer St., PHILA., PA. R. C. Archdiocese of Phila., 310 N. 19 St., Phila., Pa. Bids June 1. CD 5/25.

▲ Consolidated Engineering Co., 20 E. Franklin St., Baltimore, Md. CA Total est. $34,000,000. PLATE GLASS PLANT on 603 acre tract on Potomac River 3 mi. below CUMBERLAND, MD. Pittsburgh Plate Glass Co., 632 Fort Duquesne Blvd., Pittsburgh 22, Pa. Bids June 15. CD 6/6.

▲ Norman Earley, Hagerstown, Md. CA $2,330,000. Hagerstown High SCHOOL, HAGERSTOWN, MD. Washington Co. Bd. Educ., Hagerstown, Md. Bids June 23, awarded June 27. CD 6/27, under LB.

▲ American Bridge Division of U. S. Steel Corp., 9-255 General Motors Bldg., Detroit, Mich. CA steel work for ENGINEERING BLDG., TOWSON, MD. Total est. $2,000,000. Bendix Radio Division, Towson, Md. Bids June 7, CD 5/26;

Kirby & McGuire, 2519 Greenmount Ave., Baltimore, Md., Riggs Distler & Co., 216 N. Calvert St., Baltimore, Md. CA electrical and mechanical contracts. (Towson, Md.);

Harry T. Campbell Sons, Towson, Md. CA parking lot. (Towson, Md.).

## SOUTH

### HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

July 13 Louisiana — July 15 Kentucky

STREETS AND ROADS

July 15 Kentucky

### HEAVY CONSTRUCTION—LB & CA

▲† Pittsburgh-Des Moines Steel Co., Neville Island, Pittsburgh, Pa., CA $4,167,747. 19-ft. pressure tunnel and laboratories, LANGLEY FIELD, VA. National Advisory Comm. for Aeronautics, Langley Field, Va. CD 6/13, under LB.

▲† J. A. Jones Constr. Co., 209 W. 4 St., Charlotte, N. C., LB $2,856,700, eight 3 story barracks bldg., subsistence bldg. and bachelor officers quarters, Marine Corps Auxiliary Landing Field, NOY 85628 BEAUFORT, S. C. P. Wks. Office, Naval Base Charleston, S. C. Bids June 23. CD 6/1.

▲ FLORIDA—State Road Dpt., Tallahassee,

Fla.—Jaxon Constr. Co., Box 2587, W. Bay Annex, Jacksonville, Fla., LB, $200,499, reworking existing rock base hot mix surf. 43.265 mi. various roads, Jobs 7250-170, 7283-151, 7270-151 and 7279-153, Duval Co.; LB $113,318. reworking existing rock base, surf., sand-asph. hot mix, b. conc. surf. 22.14 mi. various roads, Job 7285-152, 7266-152, 7268-153 and 7254-152 and 7267-151, Duval Co.;

Fla.—Marion Constr. Co., Box 577, Ocala, Fla., LB $573,728, rock base, with b. conc. binder course, storm sewers, small drainage structures 3.629 mi. State Rds. 25 and 500, Jobs 1104-205 and 1104-204, F-002-2 (13) and F-019-3 (9), Lake Co.; LB $1,235,025, rock base with b. conc. binder course, small drainage structures, 2 conc. box culverts, one bridge, 15.562 mi. State Rd. 5, Jobs 7802-275 and 7207-209, Proj. F-003-6 (4) and F-003-7 (9), St. John's and Duval Counties;

Fla.—H. E. Wolfe Constr. Co., Box 1361, St. Augustine, Fla., LB, $296,697. base, with bit. b. conc. surf. course, small drainage structures, one box culvert, one 400 ft. concrete slab bridge 4.123 mi. State Road 10, Job 6101-208, F-006-2 (9), Washington Co.;

Fla.—L. L. Hall Constr. Co., Orange Park, Fla., LB, $122,854. limerock stab. base with surf., small drainage structures, concrete box culvert, 3.792 mi. State Road S-205, Fed. Aid Proj. S-282 (3), Job 7353-250, Flagler Co.;

Fla.—Cone Bros. Contr. Co., Box 1301, Tampa, Fla., LB, $249,378, rock base with surf. 200 ft. concrete slab bridge, small drainage structures 5.488 mi. State Road S-589, Job 1067-250, Fed. Aid Proj. S-330 (3), Hillsborough Co.;

Fla.—Faulk-Coleman Constr. Co., Woodville Hy., Tallahassee, Fla., LB $157,339, soil cement base with surf., 1 concrete box culvert, small drainage structures, 5.581 mi. State Road S-204, Job 7854-259, Proj. S-399 (1), St. John's Co.;

Fla.—L & P Corp. and L. E. W. Corp., Ocala, Fla., LB $205,418, rock base with surf., small drainage structures, 6.233 mi. State Road S-44-A, Fed Aid Proj. S-429 (1), Job 1158-250, Lake Co. Bids June 23. CD 6/13.

▲† Massman Constr. Co., 1221 Baltimore St., Kansas City, Mo., LB, $5,296,393. 100x600 ft. lock at War-


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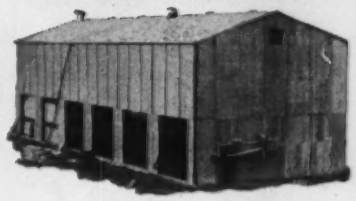

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rior Lock and Dam near Eutaw, Greene Co., ALABAMA. U. S. Eng., P.O. Box 1169, Mobile 7, Ala. Bids June 15. CD 5/13.

▲† **Herbert Constr. Corp.**, 2208 8 Ave. S., Birmingham, Ala., CA, **$1.665,678.** extension for fuel storage area, taxiway for new runway exten. and access road, Brookley Air Force Base, MOBILE, ALA. U. S. Eng., P. O. Box 1169, Mobile 7, Ala. Bids June 21. CD 6/27, under LB.

### BUILDINGS—LB & CA

▲ **Trinkle & Dobyns**, P.O. Box 6, Dublin, Va., CA **$1,380,400**, est. $1,300,000. Male CRIMINAL BLDG. Southeastern State Hospital, MARION, VA. Commonwealth of Va., State Hospital Bd., Dr. J. E. Barrett, dir., 117 N. Ballard St., Richmond, Va. Bids June 7. CD 6/13, under LB.

▲ **Virginia Eng. Co.**, 29th St. at James River, Newport News, Va., CA **$1,023,000**, est. $1,000,000. 148 unit HOUSING, Proj. VA-1-5A, PORTSMOUTH, VA. Portsmouth Redevelopment & Housing Auth., 1900 Columbus Ave., Portsmouth, Va. Bids May 17. CD 5/25, under LB.

▲ **Thompson & Street Constr. Co.**, 47 Trinity Ave. S.W., Atlanta, Ga., CA, **$1,250,000.** 2 story, 212,000 sq. ft., brick, steel, concrete mfg. PLANT addn., MACON, GA. Armstrong Cork Co., Liberty and Charlotte Sts., Lancaster, Pa. CD 6/16.

▲† **M. T. Reed Constr. Co.**, 162 Millsaps Ave., **Contractors Material Co.**, 182 N. Gallatin St., and **Taylor-Wheless Co.**, Hy. 80 West, all Jackson, Miss. and **Ruby Constr. Co.**, Madisonville, Ky., CA, **$12,575,723.** 478 storage IGLOOS, Anniston Ordnance Depot, ANNISTON, ALA. U. S. Eng., 2301 Grant St., Mobile, Ala. Bids June 21, awarded June 27. CD 6/28, under LB.

## MIDDLE WEST

### HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
July 26 Ohio
STREETS AND ROADS
July 26 Ohio

▲ **INDIANA**—BA 7/13—Indiana Toll Road Comn., 309 W. Washington St., Indianapolis, Zone 4,
constr. five pairs service areas (restaurants and filling stations) on Northern Indiana East-West Toll Rd., near East Gary, Porter Co.; Rolling Prairie, LaPorte Co.; Elkhart in Elkhart Co.; Brighton, LaGrange Co.; Fremont, Steuben Co. CD 6/20, under LB.

### HEAVY CONSTRUCTION—LB & CA

▲ **INDIANA**—Indiana Toll Road Comn., 309 W. Washington St., Indianapolis, Zone 4,
**Bates & Rogers Constr. Corp.**, 600 W. Jackson St., Chicago, Ill., CA **$8,022,017**, constr. 2.5 mi. toll road between Buchanan and Virginia Sts., in Gary, Lake Co. Bids June 15. CD 6/20 under LB.

▲ **INDIANA**—Indiana Toll Road Comn., 309 W. Washington St., Indianapolis, Zone 4,
**Bates & Rogers Constr. Corp.**, 600 W. Jackson St., Chicago, Ill., and **J. C. O'Connor & Sons, Inc.**, 2104 Miner St., Fort Wayne, Ind., LB **$6,086,571.** (7 bidders) constr. 2.5 mi. sect. between Virginia St. and 15 Ave. in Gary, Lake Co. Bids June 22. CD 6/3.

▲ **ILLINOIS**—Dpt. P. Wks. & Bldgs., Div. Hys., Centennial Bldg., Springfield,
Ill.—**Santucci Constr. Co.**, Skokie, Ill., LB, **$232,194** (4 bidders) water mains, sewers 1.3 mi. F.A. 131, Oak Park, Cook Co.; LB **$324,785**, reconstr. water mains, 2.25 mi. F.A. 131, Forest Park, Cook Co.;
Ill.—**McDougal-Hartmann Co.**, 1500 W. Adams St., Peoria, Ill., LB, **$199,400** (2 bidders) grav. or crushed stone surf. course, wid'n. 1 bridge 5.11 mi. F.A.S. 190, Whiteside Co.; LB **$1,428,920**, c. conc. 6.08 mi. Ill. 13, Jackson Co.;
Ill.—**Bituminous Fuel & Oil Co.**, 304 Illinois Ave., East St. Louis, Ill., LB, **$128,990**, bit. surf. 5.6 mi. F.A.S. 738, Greene Co.; LB **$96,360** (6 bidders) grav. or crushed stone surf. course 3.96 mi. F.A.S. 814, Edwards Co.;
Ill.—**Arcole Midwest Co.**, 3225 Main St., Evanston, Ill., LB, **$235,527** (7 bidders) retaining walls on F.A. 131, Chicago, Cook Co.;
Ill.—**Johnston Roadbuilders, Inc.**, 1 S. Eastern Ave., Joliet, Ill., LB, **$230,804** (4 bidders) Intermittent bit. conc. resurf. and patching 14.5 mi. U. S. 52, Will Co.;
Ill.—**Brown & Lambrecht**, 433 S. Chicago St., Joliet, Ill., LB **$126,248** (4 bidders) grav. or crushed stone base course 2.87 mi. F.A.S. 287, Will Co.;
Ill.—**S. J. Groves & Sons, and J. C. O'Connor & Sons**, 1104 W. Reynolds St., Springfield, Ill., LB, **$2,172,650** (2 bidders) c. conc. 6.32 mi. F.A. 113, for Ill. approach to Wabash River Bridge, White and Gallatin Counties;
Ill.—**Jansen & Schaefer**, 1500 Broadway, Pekin, Ill., LB, **$82,845** (3 bidders) grav. or crushed stone surf. course 3.64 mi. F.A.S. 465, Tazewell Co.;
Ill.—**Sankey Bros., Inc.**, 402 Illinois Bldg., Springfield, Ill., LB, **$82,098** (2 bidders) b. conc. resurf. 3.26 mi. U. S. 36 and 54, Sangamon Co.;
Ill.—**I. D. Lain Co.**, 1901 E. Adams St., Springfield, Ill., LB, **$291,535**, (2 bidders) c. conc. base course widn. 1.71 mi. conc. base course 1.55 mi. U. S. 36 and 54, Sangamon Co.;
Ill.—**Gem Contg. & Paving Co.**, Moose Bldg., Quincy, Ill., LB, **$101,360.** (5 bidders) b. conc. resurf. 5.24 mi. F.A. 80, Pike and Adams Counties;
Ill.—**W. L. Miller Co.**, Elvaston, Ill., LB **$259,328** (4 bidders) crushed stone or waterbound macad. course 5.23 mi. F.A. 80, Pike and Adams Counties;
Ill.—**Seneca Petroleum Co.**, 439 W. 33 St., Chicago 16, Ill., LB, **$128,869** (3 bidders) b. conc. resurf. and conc. patching 6.53 mi. Ill. 88 and 90, Peoria, Marshall, Bureau and Stark Counties;
Ill.—**Swords & Dietz**, 107 S. Jefferson Ave., Peoria, Ill., LB. **$83,676** (2 bidders) grav. or crushed stone base course 3.26 mi. F.A.S. 1385, Peoria Co.;
Ill.—**Litchfield Bituminous Corp.**, Hillsboro, Ill., LB, **$84,868** (2 bidders) b. conc. resurf. 0.09 mi. and bit. surf. 0.6 mi. F.A.S. 723, Montgomery Co.;
Ill.—**Triangle Constr. Co.**, 480 N. Evergreen Ave., Kankakee, Ill., LB, **$98,103** (4 bidders) bit. surf. 2.13 mi. F.A.S. 933, Massac Co.;
Ill.—**J. P. Hollerich Co.**, P. O. Box 391, LaSalle, Ill., LB, **$104,584.** intermittent b. conc. resurf. 10.25 mi. U. S. 34 and 52 and Ill. 26, Lee, Bureau and LaSalle Counties;
Ill.—**Gunther Constr. Co.**, 600 E. Main St., Galesburg, Ill., LB, **$85,911** (3 bidders) b. conc. resurf. and patching 4.56 mi. U. S. 150, Knox Co.;
Ill.—**White Constr. Co.**, 1736 Fullerton Ave., Chicago 14, Ill., LB, **$213,952**, (5 bidders) b. conc. resurf. 5.94 mi. S.B.I. 19, 21, 42, Chicago, Cook Co.;
Ill.—**Crowley Sheppard Asphalt Co.**, P. O. Box 144, Maywood, Ill., LB, **$112,021** (4 bidders) b. conc. resurf. 1.16 mi. S.B.I. 4, Chicago, Cook Co.;
Ill.—**Barber Paving Co.**, 1 S. Eastern Ave., Joliet, Ill., LB, **$106,946** (3 bidders) c. conc. base course wid'n., b. conc. resurf. 0.49 mi. U. S. 51 and Ill. 16, Pana, Christian Co.;
Ill.—**Franklin Asphalt Co.**, 309 E. Spanl St., Benton, Ill., LB, **$93,407.** bit. surf. and base repairs Ill. 127 and 169, F.A.S. 932, 935 and SBI 140, Alexander, Gallatin, Hardin, Jackson, Johnson, Massac, Pope, Pulaski and Union Counties;
Ill.—**W. B. Clements Co.**, and **Reeves Bros. Constr. Co.**, Milford, Ill., LB, **$108,773.** (7 bidders) bit. surf. 5.04 mi. F.A.S. 335, Ford Co. Bids June 24. CD 6/15.

▲† **Davis Brothers, Inc.**, 2631 Bagley St., Detroit, Mich., CA **$2,574,354.** special mechanical and electric equip. constr., installation, Detroit Arsenal, Center Line, DETROIT, MICH. U. S. Eng., 600 E. Jefferson Ave., Detroit 26, Mich., Bids 5/9, CD 7/7, under LB.

### BUILDINGS—LB & CA

▲ **Frank Messer & Sons, Inc.**, Paddock Rd., Cincinnati, O. CA **$1,616,000.** 3 story, brick, stone, rein.-con. Seton HIGH SCHOOL at Glenway and Beech Aves., CINCINNATI, O. Sisters of Charity, Delhi Park, Cincinnati, O. Bids June 14, awarded June 21. CD 6/17, under LB.

▲ **S. C. Wessel Co.**, 1652 Des Plaines Ave., Des Plaines, Ill., Own Forces, **$2,300,000.** 140 HOMES, DES PLAINES, ILL. Loewenberg & Loewenberg, 111 W. Monroe St., Chicago 3, Ill., archts.

▲ **Max Broock, Inc.**, 300 S. Woodward St., Birmingham, Mich. Owner Builds. **$1,000,000.** Charing Cross Estates brick HOMES, BIRMINGHAM, MICH.

▲† **Perron Constr. Co.**, 6525 Lincoln St., Detroit, Mich. CA **$1,628,747.** MACHINERY STORAGE BLDG., access road, utilities, GRAND BLANC, MICH. U. S. Eng., 600 E. Jefferson Ave., Detroit 26, Mich. Bids June 21. CD 6/3.

## WEST OF MISSISSIPPI

### HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
July 19, 20 Texas
STREETS AND ROADS
July 19, 20 Texas

### BUILDINGS—BA

▲ **Tex., Austin**—SCHOOL IMPRVS.—BA 7/14—State Bd. Control, Capitol Station, Austin, State School for Deaf imprvs. $2,000,000. Extended date. Fehr & Granger, 502 E. 5 St., and Niggli & Gustafson, Assoc. Archts., 1313-A S. Congress St., archts. CD 6/22.

▲ **Iowa, Cedar Rapids**—SCHOOLS—BA 8/5—Bd. Educ., 346 2 Ave. S. W., West High School, 10 Ave. S. W.; East Side High School, Cottage Grove Ave. S. E. $5,950,000. Leo A. Daly Co., Insurance Exchange Bldg., Omaho, Neb., archt. CD 6/27.

### HEAVY CONSTRUCTION—LB & CA

▲ **MacDonald Constr. Co.**, 1310 S. Grand Ave., St. Louis 4, Mo. and **Foster & Creighton Co.**, American National Bank Bldg., Nashville, Tenn. CA **$8,179,291**, est. $7,151,000. Contr. No. 7, airframe overhaul base 240x816 ft. bldgs., Mid-Continental International Airport, KANSAS CITY, MO. City, City Hall, Kansas City, Mo. Bids May 17, awarded June 15. (Correction —contractor's address). CD 6/21, under CA.

▲ † **Hyde Constr. Co.**, 1804 N. Mill St., Jackson, Miss., LB, **$1,799,464**, est. $1,959,359 road rehabilitation, utilities, curbs, gutters storm drainage, Blytheville Air Force Base, BLYTHEVILLE, ARK. U. S. Eng., P. O. Box 867, Little Rock, Ark. Bids June 24. CD 6/8.

▲ **TEXAS**—State Hy. Comn., Austin,
Tex.—**John F. Bukner & Sons**, P. O. Box 76, Cleburne, Tex. CA **$1,329,295**, flexible base and b. conc. 17.839 mi. Hy. US 67 and FM 1142, Proj. FI 826 (14), etc., Rockwall Co.;
Tex.—**R. B. Butler, Inc. and J. H. Howard**, P. O. Box 471, Bryan, Tex., CA **$547,255**, grading, structures, bridge and surf. 27.135 mi. Hy. FM 195, 2283, etc. Proj. S 282 (1), etc., Red River Co. Bids June 14, awarded June 24. CD 6/20, under LB.

### BUILDINGS—LB & CA

▲ **Haren & Laughlin Constr. Co.**, 953 Minnesota Ave., Kansas City, Kan. CA **$1,500,000.** 1 story, 26,000 sq. ft. executive and general OFFICES, parking for 200 cars, KANSAS CITY, MO. Avon Products, Inc., 1535 Walnut St., Kansas City, Mo. Charles E. Keyser, 609 Minnesota Ave., Kansas City, Kan., archt. Awarded June 21.

▲† **Martin K. Eby Constr. Co., Inc.**, 610 N. Main St., Wichita, Kan. LB **$5,488,116,** est. $5,134,567. 5 story, rein.-con., masonry HOSPITAL, incl. boiler house, water distr. sys., gas distr. sys., steam and air-conditioning, water distr. sys., electrical distr. sys., sewers, Spec. No. 55-89, FORT RILEY, KAN. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids June 21. CD 5/24.

▲ **Cahill-Mooney Constr. Co.**, Billings, Mont. CA **$1,380,000.** general contract JUNIOR HIGH SCHOOL, BUTTE, MONT. Butte School Dist. 1, Butte, Mont. Bids June 16. CD 6/9.

▲ **Robert E. McKee**, 221 Washington Ave., Santa Fe, N. M., LB **$6,775,000,** 7 story, 400-bed, brick, steel St. Mary-Corwin HOSPITAL addn., PUEBLO, COLO. Sisters of Charity, c/o Mother Mary Romana, St. Joseph, O. Bids June 17. CD 4/22.

## FAR WEST

### HEAVY CONSTRUCTION—BA

**STATE HIGHWAY LETTINGS**
**STREETS AND ROADS**
**July 20, 21 California**

### BUILDINGS—BA

▲ **Wash., Seattle**—EXCHANGE—BA 7/14—Pacific Telephone & Telegraph Co., Exchange Bldg., Zone 4, 6 story, 111x130 ft., steel telephone equipment bldg. $1,500,000.

▲ **Calif., Los Angeles**—HOSPITAL—BA 9/21—Los Angeles Co., Hall of Records, 9 story, 350,000 sq. ft. osteopathic unit for Los Angeles County General Hospital. $8,515,000. Plans deposit $200. Adrian Wilson & Paul R. Williams, 816 W. 5 St., archts.; elevators, $550,000. Hilburg, Hengstler & Turpin, 257 S. Spring St., engrs. CD 11/5.

### HEAVY CONSTRUCTION—LB & CA

▲† **M. M. Sundt Constr. Co.**, 440 South Park Ave., Tucson, Ariz., LB **$1,362,974,** airmen's dormitories, Yuma County Airport and Site SM-162, ENG-04-353-55-174, YUMA, ARIZ. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids June 28. CD 6/15.

▲ **S. Morgan Smith Co.**, East Berlin Rd., York, Pa., CA, **$1,701,870,** 4 turbines for Mayfield Powerhouse, TACOMA, WASH. City, City Hall, Tacoma, Wash. Bids May 26. CD 6/1, under LB.

▲ **Arundel Corp.**, foot of Pratt St., Baltimore, Md., and **L. E. Dixon Co.**, 409 S. California St., San Gabriel, Calif., CA, **$10,863,140,** est. $45,000,000. constr. Mayfield hydro-electric dam on Cowlitz River, TACOMA, WASH. City, City Hall, Tacoma, Wash. Bids June 3, awarded June 22. CD 6/9, under LB.

▲† **M. H. Golden Constr. Co.**, 3485 Noell St., San Diego, Calif., LB **$2,338,000,** Hangar No. 2 and utilities exten., Naval Air Station, NOY 89081, Spec. 47972. MIRAMAR, CALIF. Dpt. Navy, 11th Naval Dist., San Diego, Calif. Bids June 27. CD 6/3.

### BUILDINGS—LB & CA

▲ **Stearns-Roger Mfg. Co.**, 660 Bannock St., Denver, Colo., CA **$8,250,000.** 60,000 kw. steam electric generating PLANT, WHITNEY, NEV. Southern Nevada Power Co., Reid Gardner, pres., 109 S. 2 St., Las Vegas, Nev.

▲ **Williams & Burrows, Inc.**, 500 Harbor Blvd., Belmont, Calif., LB **$1,167,400,** Herbert Hoover HIGH SCHOOL, LONG BEACH, CALIF. Long Beach Bd. Educ., 715 Locust Ave., Long Beach, Calif. Bids June 24. CD 6/14.

▲ **Allis-Chalmers Mfg. Co.**, 1126 S. 70 St., Milwaukee, Wis., CA, Total **$4,000,000.** KILN at plant expansion, SAN ANDREAS, CALIF. Calaveras Cement Co., Copperopolis Rd., San Andreas, Calif. CD 12/31/53.

▲† **James I. Barnes Constr. Co.**, 940 Spring St., Redwood City, Calif., LB **$1,978,000.** permanent BARRACKS and MESSING FACILITIES, NOY 83821, Spec. 43888 (rev.) U. S. Naval Station, Treasure Island, SAN FRANCISCO, CALIF. P. Wks. Officer, Twelfth Naval Dist., San Bruno, Calif. Bids June 22. CD 6/2.

**City and San Francisco Co. Dpt. P. Wks.**, City Hall, San Fracisco, Calif., rejected bids June 1, Ridgepoint No. 2 SCHOOL, SAN FRANCISCO, CALIF. LB **$934,800.** CD 6/9, under LB.

▲ **James A. Hutzler Constr. Co.**, 6510 Outlook Ave., Oakland, Calif., Owner Builds. **$1,250,000.** 16-unit SHOPPING CENTER, SONOMA, CALIF.

▲ **Utah Constr. Co.**, 100 Bush St., San Francisco, Calif., CA, **$4,000,000.** 550,000 sq. ft. walnut PLANT, STOCKTON, CALIF. California Walnut Growers Assn., 2700 E. 54 St., Los Angeles, Calif. CD 11/11.

## CANADA

### BUILDINGS—BA

**Ont., Petawawa**—MESS, etc.—BA 7/19—Defence Constr. Ltd., 56 Lyon St., Ottawa, officer's mess and 3 officers quarters and outside services, Army Station. $900,000. Plans deposit $100. CD 12/15.


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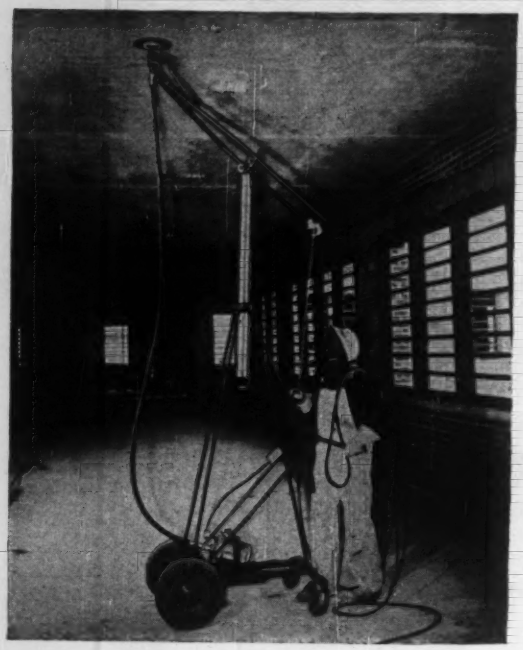

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▲ **N. B., Fredericton**—QUARTERS, etc.—BA 7/20—Defence Constr. Ltd., 56 Lyon St., Ottawa, Ont. 4 sergeants quarters, 4 sergeants and 4 W. O. messes, Forestry Headquarters, Army Camp $4,000,000. Plans deposit $10. CD 8/1/52.

▲ **B. C., Vancouver**—PLANT—BA 7/25—Elk Falls Co. Ltd., Duncan Bay, expand plant by installation new paper machine, 400-ton kraft pulp mill and bleach plant with 175-ton daily output at Duncan Bay. $7,500,000. H. A. Simons, Ltd., 16 E. Hastings St., engrs. CD 9/16/52.

### HEAVY CONSTRUCTION—LB & CA

▲ **Reg. H. Steen Ltd.**, 1119 Davenport Rd., Toronto, Ont., CA $1,150,651 (18 bidders) underground steam distr. system, Army Station, PETAWAWA, ONT. Defence Constr. Ltd., 56 Lyon St., Ottawa, Ont. Bids May 19. CD 4/27.

### BUILDINGS—LB & CA

▲ **Kennett Constr. Ltd.**, 1630 W. 5 Ave., Vancouver, B. C., CA $1,439,937, erect rein.-con. steel MEDICAL SCHOOL and X-RAY DEPARTMENT addns., alterations, VANCOUVER, B. C. Vancouver General Hospital 12 and Heather Sts., Vancouver, B. C. Bids June 9, awarded June 22. CD 5/13.

▲ **Dominion Constr. Ltd.**, 195 W. 2nd Ave., Vancouver, B. C., CA $2,000,000. increase storage facilities of GRAIN ELEVATOR by addnl. 2,000,000 bu., build WORKHOUSE and CLEANING HOUSE, 11 grain cleaners and one screening recleaning machine, rein.-con. constr. VANCOUVER, B. C. Albert Wheat Pool Ltd., foot of Cassiar St., Vancouver, B. C. Bids June 6, awarded June 22. CD 6/6.

▲ **Louis Donolo (Ontario) Ltd.**, 2790 Dufferin St., Toronto, Ont., CA, $1,235,073. (7 bidders) 98 type "B" rein.-con. APARTMENTS and services, Army Camp, PETAWAWA, ONT. Central Mortgage & Housing Corp., 40 Eglinton Ave. E., Toronto, Ont. CD 12/15.

▲ **Hughes Constr. Co. Ltd.**, 365 Rogers Rd., Toronto, Ont., CA $1,222,400 part 2 and 3 story, H-shaped, JUVENILE and FAMILY COURT, 311 Jarvis St., TORONTO, ONT. Municipality of Metropolitan Toronto, 67 Adelaide St., E. Toronto, Ont. Bids June 7, awarded June 23. CD 6/14, under LB.

▲ **Marshall Development Co.**, 185 Bloor St. E., Toronto, Ont., CA, $1,056,000. 12 story, 132 suite rein.-con., brick, block APARTMENT, St. George and Prince Arthur Sts., TORONTO, ONT. Town House Ltd., 185 Bloor St. E., Toronto, Ont. Crang & Baoke, 79 Huntley St., Toronto, Ont., archts. Awarded June 21.

▲ **Louis Donolo, Inc.**, 8320 St. Lawrence Blvd., Montreal, Que., CA Over $1,000,000. 5 story, on Cote St. Catherine Rd. and 7 story on Decalles Ave., 52x312 ft., steel frame MEDICAL CENTER, MONTREAL, QUE. Medical Centre Realty, Inc., Suite 1, 1740 Bleury St., Montreal, Que. Bids June 10, awarded June 20. CD 6/8.

▲ **Runnymede Developments Ltd.**, c/o Gregoris Brothers Contractors Ltd., 166 Oakwood Ave., Toronto, Ont. Owner Builds. $2,000,000. APARTMENT HOUSING DEVELOPMENT, totalling 400 suites bordering on ravine near Grenadier Pond in west end of TORONTO, ONT. Hanks & Irwin, 2848 Bloor St. W., Toronto, Ont., archts.

▲ **W. H. Cooper Constr. Co.**, 21 Hunter St., Hamilton, Ont., CA, $1,500,000, 1 story, 400x400 ft., steel, concrete block PLANT, Water St., WHITBY, ONT. Canadian Wirebound Boxes Ltd., 1000 Gerrard St. E., Toronto, Ont. Bids June 8, awarded June 21. CD 6/3.

▲ **P. Desjardins**, 630 Craig St. W., Montreal, Que., CA, $1,250,000. 100 bungalow HOUSING program, Cote Susor, MONTREAL, QUE. G. R. Wilson Ltd., 637 Craig St. W., Montreal, Que. Louis & Aspler, 5165 Sherbrooke St. W., Montreal, Que., archts. Awarded June 20.

▲ **Quemont Constr., Inc.**, 285 Bernard Ave. W., Ste. Hyacinthe, Que., CA, $1,000,000, 4 story, bsmnt., 60x200 ft., rein.-con., stone INSTITUTE, STE. HYACINTHE, QUE. Congregation des Soeurs de St. Joseph, Hyacinthe, Que. Lalonde & Valois, 606 Cathcart St., Montreal, Que., engrs. CD 10/6.

## AMERICANS ABROAD

### HEAVY CONSTRUCTION—BA

▲ Bids will be taken on the following project under International competitive bidding of NATO.

GREECE

Greek Air Force General Staff, Branch C/5, att. W/C Narmaras, Athens, Greece, reconstr. runway and northern dispersal taxitracks, together with formation of their shoulders, formation of shoulders of the parallel taxiway; storm water drainage for runway and parallel taxiway area on Larissa Airfield. Est. $1,000,000. Firms wanting to bid should report their interest promptly. Closing date for bids will be July 9.

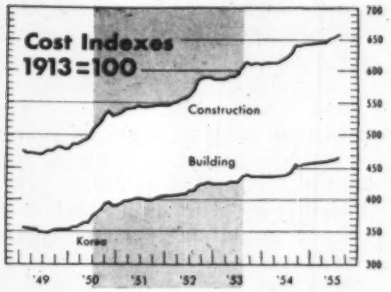
▲ Bids will be taken on the following projects under International competitive bidding of NATO.

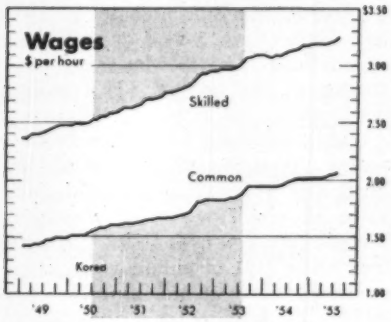
NETHERLANDS

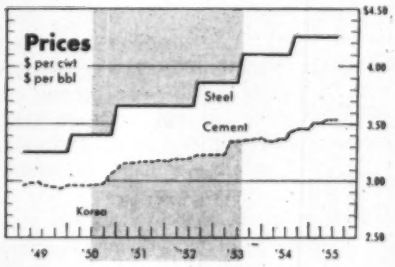
De Directeur Gebouwen, Werken en Terreinen, Bagijnestrast 40, The Hague, Netherlands, following projects in 10 airfields; runway extens. taxi tracks, rehabilitation roads, etc.; protected wing operations, squadron hangars, transmitter-receiver bldgs., rehabilitation of bunker; lighting airfield, runway, taxiway; alert aprons, fuel storage platforms, parking aprons; firing-in butts; runway arrester gear on three airfields; jelifuel tanks; fencing, demolitions. Total est. $3,939,408. Firms wanting to bid on these projects should report their interest before July 9. For information on bidding NATO projects see 6/25 Construction Daily.

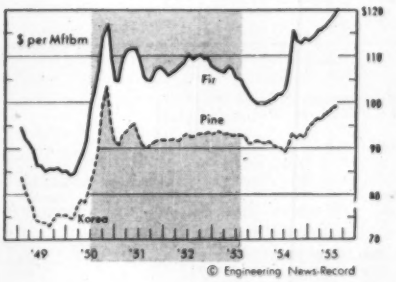
(Proposed Advertisements see pp. 82 to 85)

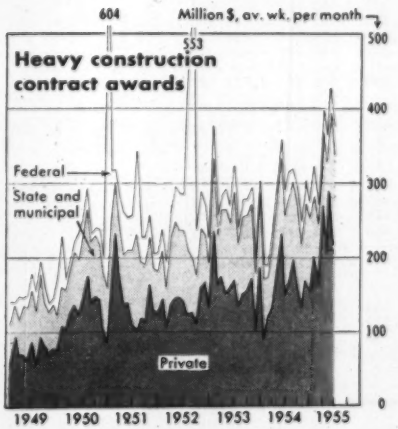
# JULY CONSTRUCTION SCOREBOARD




| ENR INDEXES (1913 = 100), 20-cities' average | 1955 July | % Change from last Month | % Change from last Year |
|---|---|---|---|
| Construction Cost | 660.09 | +0.6 | + 5.1 |
| Building Cost | 467.52 | +0.6 | + 5.3 |
| **WAGE RATES**, 20-cities' average | | | |
| Common | $2.073 | +0.7 | + 3.9 |
| Skilled (aver. 3 trades) | 3.247 | +0.6 | + 3.3 |
| Bricklayers | 3.504 | +0.4 | + 2.2 |
| Structural Ironworkers | 3.227 | +0.5 | + 4.2 |
| Carpenters | 3.011 | +0.9 | + 3.6 |
| **MATERIAL PRICES**, 20-cities' average | | | |
| Cement, bulk, per bbl | 3.551 | 0.0 | + 3.6 |
| Structural Steel, (3-mill aver.), per cwt** | 4.250 | 0.0 | + 3.7 |
| Sand, per ton | 2.357 | +0.4 | + 0.4 |
| Lumber, 2x4 Fir, per M. ft. bm | 120.361 | +1.4 | +13.4 |
| Lumber, 2x4 Pine, per M. ft. bm | 99.400 | +0.5 | + 9.3 |
| Common brick, per M | 34.392 | +1.8 | + 3.5 |
| Ready-mixed concrete, per c. y | 12.538 | +0.5 | + 3.7 |
| Structural Clay Tile, 3x12x12 per M | 160.953 | +0.2 | − 0.4 |

** Expect increase early in July

| CONTRACTS AWARDED (Millions) | 1955 June (5-Wks)* | 1955 6-Months (26-Wks)* | % Change from '54 June (4-Wks)* | % Change from '54 6-Months (25-Wks.)* |
|---|---|---|---|---|
| Total U. S. (ENR reported) | $1881.5 | $9424.1 | +29.7 | +39.4 |
| Private | 1105.9 | 5905.5 | +47.7 | +52.2 |
| Public | 775.6 | 3518.6 | +10.5 | +22.1 |
| Federal | 187.7 | 893.4 | +10.0 | +56.4 |
| ENR Volume Index, '13 = 100 | 633 | 614 | +24.1 | +32.3 |
| **NEW CAPITAL** (Millions) | | | | |
| Total | 1101.2 | 4354.4 | −12.3 | − 12.1 |
| State & Municipal Bond Sales | 631.5 | 2297.3 | −28.0 | − 27.8 |
| Corporate Security Sales | 381.0 | 1774.0 | + 5.2 | + 12.0 |
| Federal (non-federal work) | 15.6 | 150.9 | − 6.0 | + 20.8 |
| Federal (federal work) | 73.1 | 132.2 | ..... | +112.5 |

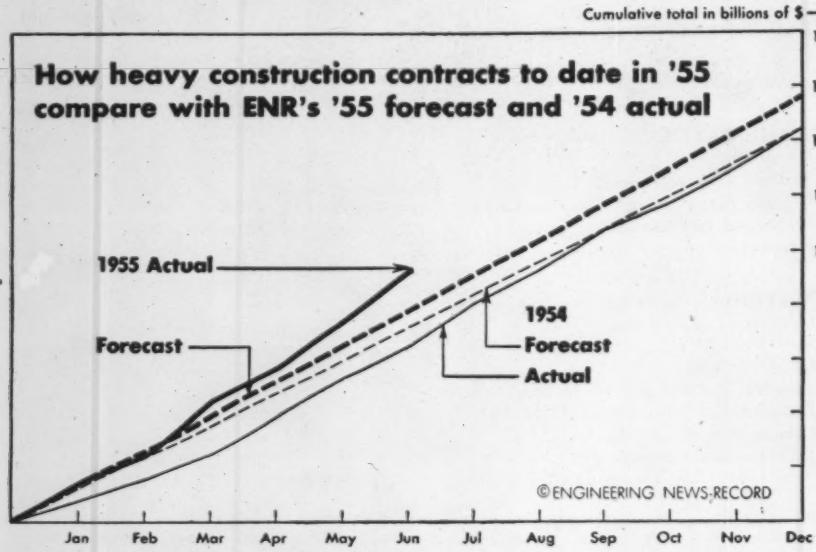
* Computedon weekly average

| MATERIAL SHIPMENTS & LABOR SUPPLIES (millions) | 1955 Mar. (M) April (A) May (May) | 3-Mos. (3) 4-Mos. (4) 5-Mos. (5) | % Change from '54 Mo. | % Change from '54 Yr.-Cum. |
|---|---|---|---|---|
| Cement, bbls. Bu. of Mines | 22.604(M) | 49.724(3) | +20.5 | +10.3 |
| Fabr. Struc. Steel, tons AISC | .223(May) | 1.133(5) | −12.2 | −14.9 |
| Lumber, mil. ft. bm., NLMA | 3.451(A) | 12.693(4) | + 2.7 | + 5.3 |
| Lumber Prod., mil. ft. bm., NLMA. | 3.241(A) | 12.315(4) | − 2.6 | − 0.04 |
| Contract Const. Employ., BLS | 2.537(May) | 2.342(5)† | − 3.7 | − 4.7 |

† Average

**ENR INDEX REVIEW**

| | Construction Cost 1913=100 | Construction Cost 1949=100 | Building Cost 1913=100 | Building Cost 1949=100 | Volume 1913=100 | Volume 1949=100 |
|---|---|---|---|---|---|---|
| 1954 | | | | | | |
| July | 628.26 | 131.70 | 444.05 | 126.23 | 547 | 158 |
| Aug | 641.68 | 134.52 | 455.54 | 129.48 | 525 | 152 |
| Sept | 640.18 | 134.21 | 454.28 | 129.13 | 503 | 145 |
| Oct | 641.49 | 134.48 | 455.54 | 129.49 | 423 | 122 |
| Nov | 642.42 | 134.67 | 456.34 | 129.72 | 522 | 151 |
| Dec | 642.71 | 134.74 | 456.77 | 129.84 | 464 | 134 |
| **Annual Aver.** | **627.96** | **131.64** | **445.68** | **126.73** | **481** | **139** |
| 1955 | | | | | | |
| Jan | 643.72 | 134.95 | 457.91 | 130.17 | 560 | 162 |
| Feb | 645.24 | 135.26 | 459.43 | 130.60 | 459 | 133 |
| Mar | 645.70 | 135.36 | 459.63 | 130.65 | 691 | 200 |
| Apr | 647.49 | 135.74 | 460.62 | 130.94 | 609 | 176 |
| May | 653.26 | 137.01 | 462.55 | 131.65 | 731 | 211 |
| June | 655.96 | 137.51 | 464.82 | 132.13 | 633 | 183 |
| July | 660.09 | 138.38 | 467.52 | 132.90 | ... | ... |




# Four Straight Record Months

Contracts reported to ENR in June racked up the fourth straight monthly record. The weekly average was $376 million, 14% above the previous high for this month set in 1953 and 30% more than last year.

The records set in June and earlier months have pushed up the actual trend of awards over ENR's January forecast (chart, above). Two weeks ago, the Departments of Commerce and Labor boosted their January forecast to a gain of 11% over 1954.

• **Private work**—Private work awarded in June was less than May's all-time record for average weekly awards. But it was 31% above the former June record in 1953 and 48% above last year.

All major types of private construction contributed to this big total. Mass housing averaged $123 million, fourth highest for any month on record. Commercial building continued its fast May pace with $35 million per week. Industrial awards slacked off from the high level of April and May to average $44 million, which was still 24% higher than June 1954.

• **Public work**—Highway contracts reached an all-time high in June—$54 million per week. This is 4% ahead of the previous record in 1953, which also happened to be reached in June. (It is also 24% ahead of May 1955.)

State and local awards rose to a weekly average of $118 million—only 1% below the June high set in 1953 and 11% above a year ago. Federal awards held close to May's fast pace, scoring at the rate of $37.5 million per week.

Public buildings other than housing pulled out of the May slump and increased to $35 million a week, highest since March. However, this category was off 10% from June 1953. It's the only major type of public works where contracts this year are running below 1954. The total so far is off 3%, and is the lowest since 1950.

Bridge contracts increased last month to nearly $10 million per week, but were slightly below a year ago and 34% under the June record in 1953. Waterworks and sewerage both increased in June. Waterworks topped June 1954, while sewerage ran about even with a year ago.

Earthwork & waterway awards put in a third consecutive big month. Awards averaged $14 million, nearly three times June 1954.

## ENGINEERING CONSTRUCTION CONTRACTS—JUNE 1955

ENGINEERING NEWS-RECORD *reports continental U. S. Construction projects of the following minimum costs—Waterworks, excavation, drainage and irrigation,* $44,000; *other public works,* $73,000; *industrial buildings,* $93,000; *other buildings,* $344,000.

Five Weeks—Thousands of Dollars (000 Omitted)

| | June, 1955 | | | | | | | Total U. S. Six Months | | % Change | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | New England | Middle Atlantic | South | Mid-West | West of Mississippi | Far West | Total U. S. | 1955 (26 weeks) | 1954 (25 weeks) | '54 to '55 Av. Wk. | Canada June 1955 |
| **Public Works** | | | | | | | | | | | |
| Waterworks | 598 | 8,411 | 2,699 | 2,641 | 5,547 | 5,400 | **25,296** | **128,844** | 111,403 | +11 | 1,243 |
| Sewerage | 1,051 | 9,903 | 5,335 | 14,259 | 4,625 | 6,766 | **41,939** | **200,914** | 186,626 | + 4 | 2,688 |
| Bridges | 5,718 | 12,481 | 9,783 | 6,661 | 11,170 | 3,636 | **49,449** | **229,824** | 187,154 | +18 | 2,373 |
| Earthwork and drainage | 955 | 23,819 | 2,280 | 528 | 7,660 | 34,627 | **69,869** | **276,109** | 134,244 | +98 | 33,937 |
| Streets and roads | 30,120 | 36,196 | 47,577 | 61,104 | 71,372 | 24,066 | **270,435** | **1,063,497** | 810,688 | +26 | 17,224 |
| Public buildings, residential | 4,604 | 6,333 | 3,228 | 3,480 | 4,911 | 2,066 | **24,622** | **138,794** | 94,200 | +42 | 17,985 |
| Other public buildings | 8,928 | 39,371 | 23,181 | 24,448 | 49,698 | 28,924 | **174,550** | **839,583** | 828,559 | − 3 | 19,977 |
| Unclassified | 11,876 | 20,310 | 16,414 | 7,363 | 42,020 | 21,515 | **119,498** | **641,010** | 420,008 | +47 | 2,718 |
| **Total Public** | **63,850** | **156,824** | **110,497** | **120,484** | **197,003** | **127,000** | **775,658** | **3,518,575** | **2,772,882** | **+22** | **98,145** |
| Federal government (included in above classifications) | 12,794 | 40,556 | 27,198 | 8,648 | 61,122 | 37,359 | **187,677** | **893,412** | 549,359 | +56 | 27,055 |
| **Private** | | | | | | | | | | | |
| Bridges | ..... | ..... | ..... | ..... | ..... | ..... | ..... | **1,625** | 2,850 | −45 | ..... |
| Industrial buildings | 5,738 | 48,276 | 28,741 | 36,901 | 64,022 | 36,869 | **220,547** | **1,254,446** | 919,625 | +31 | 60,735 |
| Mass housing | 21,645 | 238,181 | 19,550 | 155,595 | 118,271 | 60,140 | **613,382** | **3,405,585** | 2,049,449 | +60 | 39,104 |
| Commercial buildings | 3,619 | 101,114 | 9,196 | 44,048 | 72,872 | 8,609 | **239,458** | **894,292** | 610,938 | +41 | 10,365 |
| Unclassified | 167 | ..... | 584 | 1,068 | 30,431 | 249 | **32,499** | **349,618** | 147,950 | +127 | 1,208 |
| **Total private** | **31,169** | **387,571** | **58,071** | **237,612** | **285,596** | **105,867** | **1,105,886** | **5,905,566** | **3,730,812** | **+52** | **111,412** |
| **Total Engineering Construction:** | | | | | | | | | | | |
| **June, 1955—5 weeks** | **95,019** | **544,395** | **168,568** | **358,096** | **482,599** | **232,867** | **1,881,544** | ..... | ..... | ..... | **209,557** |
| May, 1955—4 weeks | 92,474 | 503,495 | 141,042 | 396,095 | 398,965 | 194,454 | **1,726,525** | ..... | ..... | ..... | 156,519 |
| June, 1954—4 weeks | 62,840 | 259,763 | 172,469 | 220,865 | 291,529 | 153,287 | **1,160,753** | ..... | ..... | ..... | 174,176 |
| **Six Months—1955** | **469,864** | **2,792,218** | **982,721** | **1,989,162** | **2,134,965** | **1,055,211** | ..... | **9,424,141** | ..... | **+39** | **851,415** |
| Six Months—1954 | 373,145 | 1,682,059 | 851,036 | 1,464,114 | 1,406,407 | 726,933 | ..... | ..... | 6,503,694 | .... | 612,201 |
| % Change '54 to '55 (Av. Wk.) | +21 | +60 | +11 | +31 | +46 | +40 | ..... | ..... | ..... | .... | +35 |

## Boxcar Shortage Continues To Plague Lumber Producers

Railroad car shortages in the Douglas fir regions of Washington, Oregon, and California continued to plague shippers of lumber and plywood last week, bolstering the bullish price structure for green fir and plywood items.

A possible bellwether in the ply trade, however, was the newly issued price guarantee for the remaining summer months issued by Evans Products of Coos Bay, Ore. Evans upped sanded ¼, ⅜, and ½ in. panels to about the current industry level of $87.50, but failed to boost sheathing above the $85 index, though a majority of mills have been receiving a bonus for this basic item.

Lumber orders continue substantially above production. But the new-order list for plywood has been below production in recent weeks. Mills report their major problem is lack of cars.

## Wage and Lumber Boosts Keep Cost Indexes Moving

Construction costs continued to climb in June because of wage increases on new contracts and increasing lumber contracts. The wage factor was most important this month, especially in the Construction Cost Index.

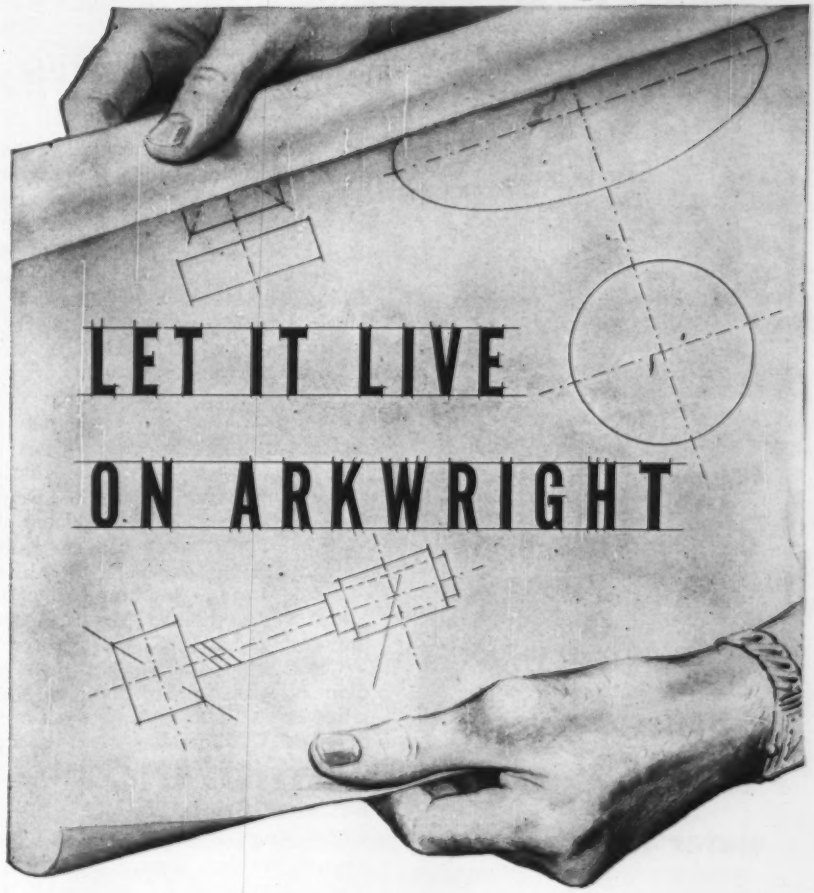
Skilled trades settled wages in seven of ENR's 20 cities, and common-labor unions signed up in four cities. Out of 10 agreements by skilled-labor unions, five were for increases of less than 10 cents per hour. Other increases ranged as high as 20 cents for Los Angeles bricklayers, 15.5 cents for Seattle structural ironworkers, and 15 cents for structural ironworkers in Boston. Increases for common labor ranged between 5 cents to 8.5 cents per hour.

On lumber, fir prices moved up in seven cities, while southern pine prices climbed in three. This more than offset price declines for fir in Pittsburgh and for southern pine in Baltimore.

• **Both rise 0.6%**—All this pushed the Construction Cost Index up 0.6% to a new high of 660.09 for July, based on 1913 = 100. This is 5.1% higher than a year ago. The Building Cost Index for July also rose 0.6% to 467.52. This index also is based on 1913 as 100 and has risen 5.3% over a year ago.

Since the start of the year, the Construction Cost Index has risen 2.7%. About two-thirds of this has been caused by wage increases. The Building Cost Index has risen 2.4%, slightly less than half of this increase has been caused by wage boosts.

(*B&F continued on page 78*)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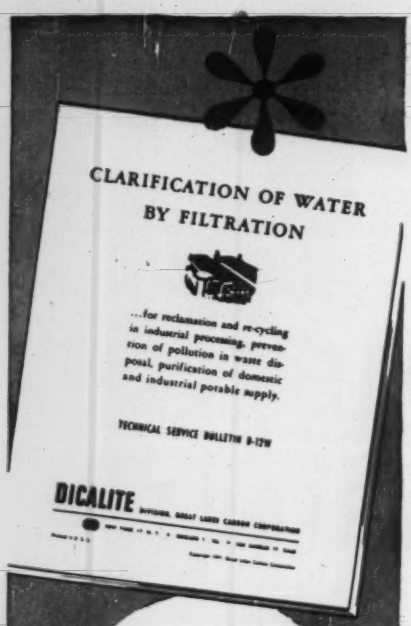
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## BUSINESS AND FINANCE

### Foley Enters Uranium Field As Investor and Builder

A well-known construction company, Foley Bros., Inc., of Pleasantville, N. Y., has entered the uranium business. Foley has purchased some of the stock of the newly formed Uranium Reduction Co., and is building an $8-million processing mill at Moab, Utah.

Other major stockholders in Uranium Reduction are: (1) Utex Co., the biggest stockholder, which has contracted to ship its ore production to the Moab mill. Principal owner of Utex is a Texas geologist, Charles Steen, who several years ago discovered what is apparently a very valuable ore body; (2) investment bankers Kuhn Loeb & Co., of New York; (3) American Zinc, Lead & Smelting Co., of St. Louis; (4) Combined Metals Reduction Co., Salt Lake City.

Uranium Reduction also will explore for and develop uranium properties on a joint venture basis with Standard Uranium Co., another firm in which Steen is interested.

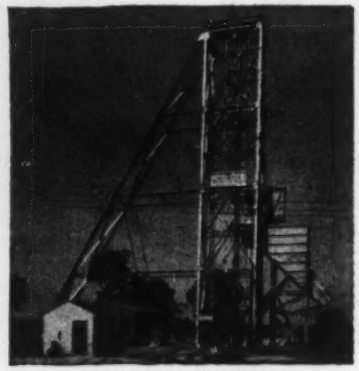
### Business Briefs . . .

• **Cement industry expands**—Latest plans to increase cement capacity are: a new increase of 2.2 million bbl annually at three plants in Pennsylvania, Virginia, and Alabama by Lone Star Cement Corp., of New York. General Portland Cement Co. will add 1¼-million bbl of capacity to its Fort Worth, Texas, plant. Consolidated Cement Corp., Chicago, will add 1¼-million bbl annual capacity with a new plant at Paulding, Ohio. Calaveras Cement Co., San Francisco, will add 1.2 million bbl of capacity to its plant at San Andreas, Calif. and Diamond Alkali Co. will add 320,000 bbl capacity at Painesville, Ohio.

• **Penn-Texas Corp.,** a wide-ranging company controlled by financier Leopold Silberstein which includes manufacture of construction and materials-handling equipment among many other activities, plans a merger with Niles-Bement-Pond Co., of West Hartford. NBP, which Silberstein also controls, makes machine tools.

• **U. S. Plywood** through a subsidiary, has acquired Muskoka Wood Products, Ltd., of Huntsville, Ontario. The firm owns a flooring plant, sawmill, and a large stand of birch timber.

• **Saco-Lowell Shops,** Boston maker of textile machinery, plans a big plant on the Southern Railway between Greenville and Easley, S. C.

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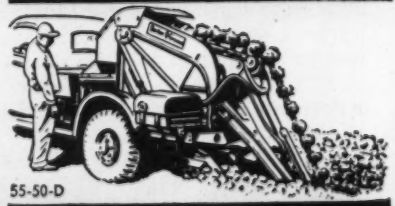


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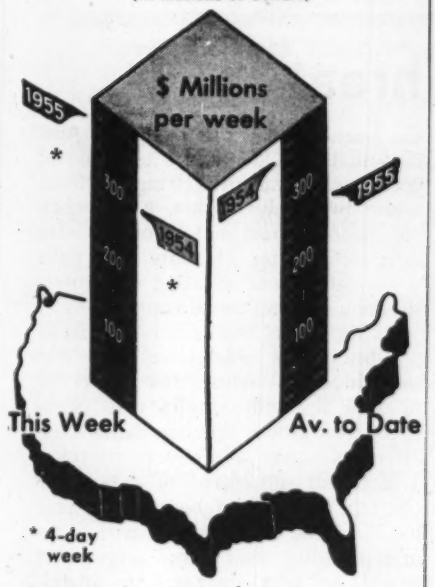
## Activity This Week

As reported to ENR
(In millions of dollars)




### Amount of contracts let

| | This Week* | Cumulative 27 wks 1955 | 1954 | % chge |
|---|---|---|---|---|
| Federal | $81.6 | $975.0 | $645.7 | +51 |
| State and Municipal | 96.7 | 2,721.9 | 2,449.3 | +11 |
| Total public | 178.3 | 3,696.9 | 3,095.0 | +19 |
| Total private | 200.6 | 6,106.1 | 4,031.1 | +51 |
| U. S. Total | $378.9 | $9,803.0 | $7,126.1 | +38 |
| **Contracts by type of work** | | | | |
| Waterworks | $8.9 | $137.6 | $119.6 | +15 |
| Sewerage | 6.5 | 207.5 | 204.4 | +2 |
| Bridges | 6.6 | 238.1 | 231.5 | +3 |
| Highways | 33.4 | 1,096.6 | 896.3 | +22 |
| Earthwork, Waterways | 28.4 | 304.4 | 153.3 | +99 |
| Buildings: | | | | |
| Public, excl. hsg. | 54.3 | 893.9 | 910.8 | −2 |
| Housg., public | 9.7 | 148.6 | 120.1 | +24 |
| Housg., private | 82.8 | 3,488.4 | 2,192.4 | +59 |
| Commercial | 21.9 | 916.3 | 664.7 | +38 |
| Industrial | 89.8 | 1,344.3 | 978.8 | +37 |
| Unclassified | 36.6 | 1,027.3 | 654.2 | +57 |
| Total | $378.9 | $9,803.0 | $7,126.1 | +38 |

* 4-day week

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

### New capital for construction

(millions of dollars)

| | Week of June 30 1955 | Cumulative 26 wks 1955 | % chge '54-'55 |
|---|---|---|---|
| Corporate securities | $82.7 | $1,774.0 | +10 |
| State and municipal: | | | |
| All except housing | 155.6 | 2,234.1 | +28 |
| Housing | 17.0 | 63.2 | +26 |
| Federal loans | 1.2 | 55.8 | −18 |
| Federal aid | ... | 95.0 | +73 |
| Total non-federal | $256.5 | $4,222.2 | −14 |
| Federal appropriations: | | | |
| In U. S. | $59.7 | $118.8 | +112 |
| Outside U. S. | 13.4 | 13.4 | +191 |
| Total new capital | $329.6 | $4,354.4 | −12 |

### ENR cost and volume indexes, 1955

| | | Base years = 100 1913 | 1926 | 1949 |
|---|---|---|---|---|
| Construction Cost | 6/30† | 660.09 | 317.31 | 138.38 |
| | 6/2† | 655.96 | 315.32 | 137.51 |
| Building Cost | 6/30† | 467.52 | 252.73 | 132.90 |
| | 6/2† | 464.82 | 251.27 | 132.13 |
| Volume | June | 633 | 257 | 183 |
| | May | 731 | 297 | 211 |

†Official monthly indexes for June & July

**Constant-Capacity CLUTCH**

As long as there's any amount of wearing surface left on the friction material, Lipe's Constant-Capacity Clutch never loses its torque capacity.

The reason? Automatic compensation for friction material wear through a unique application of the toggle lever principle. The toggles never go over center. As friction material is dissipated, their constantly increasing leverage builds up pressure in almost direct ratio to the losses sustained.

Arrangement and location of the toggles assure a uniform pressure application pattern. Every square inch of facing area engages simultaneously and in absolute parallelism. Creation of highly concentrated heat areas to cause spot burning is prevented.

**More Long-Service Features**

*Soft Engagement*—because the toggles absorb the initial energy of the springs . . . and because the speed of the toggle action fades as the pressure plate approaches the friction element.

*High Thermal Efficiency*—because the massive plate, ribbed for rapid radiation, is cooled by positively generated air currents.

*No Servicing*—because these self-compensating, non-adjustable clutches insure automatic internal adjustment throughout the life of the clutch facings.

Now in quantity production. Write for specifications and performance data.

LIPE ROLLWAY

Lipe-ROLLWAY CORPORATION

Manufacturers of Automotive Clutches and Machine Tools

Syracuse 1, N. Y.

# New York City Escapes Strike Threat

## Deadline settlement with six trades avoids construction tie-up, but industry still plagued by strikes elsewhere

New York City's multi-million-dollar construction industry eased away last week from the threat of a major strike, which would have been its first general stoppage in 23 years.

In a series of ticklish, all-night negotiations held June 30 (contracts with most of the trades expired at midnight that day), tentative agreement was reached with six of the trades on the basis of a 45-cent, two-year package, establishing the pattern for the rest of the trades with whom settlements have not yet been reached.

For the last three months, negotiations have been underway on 23 contracts, and until early last week it was generally understood that work would continue, under a long-accepted gentlemen's agreement, whether or not settlements had been reached by the Thursday deadline. But on Monday the situation grew tense when some of the trades announced a "no contract, no work" policy to negotiating teams of the Building Trades Employers Association. By Thursday, work stoppages looked like the inevitable result.

• **The tide turns**—Upsetting what appeared earlier to be relatively peaceful negotiations were the sheet metal workers, who were reported to have stood firm on a wage demand of approximately 70 cents, and five of the trades that make up a loose union group known as the Cement Alliance (hoisting engineers, cement masons, concrete workers, carpenters and metal lathers). Settlement of their demands at the marathon bargaining session Thursday night and Friday became the key to continuing negotiations successfully without a strike.

The first break for the contractors came from Local 28 of the sheet metal workers, who agreed to a two-year contract with a 45-cent increase spread over the two years. The men get a 15-cent increase, effective July 1, with three more 10-cent boosts on Jan. 1 and July 1, 1956 and Jan. 1, 1957. The union has the option of electing to take a portion of the subsequent increases in the form of fringe benefits. The five groups in the Cement Alliance soon followed suit, gaining slightly more than they had been demanding. Although the six agreements are still subject to union ratification, it is generally felt that the remaining settlements will be reached peacefully.

Under terms of the contracts that expired last week, carpenters in New York City were receiving $3.40 an hour, plus 5% in welfare contributions and 6 paid holidays; sheet metal workers got $3.50 an hour, plus 3% in welfare, 2% in vacation pay, and 3% as pension payments.

• **Other settlements**—Earlier, settlements had been reached with several of the trades in New York. Mason tenders, whose contract expired the end of May, agreed to a 25-month contract with annual increases of 10 cents, and excavating laborers had signed for similar boosts. Tentative agreement had been reached with two of the stone trades on the basis of two-year contracts, with increases of 15 and 10 cents, and elevator riggers had agreed to a one-year contract at 15 cents. Agreement with the marble workers was for a one-year contract with no increase in basic rates, but with 10 cents for vacation pay, 1% more for welfare and an additional 1% for the pension fund.

• **A look elsewhere**—Meanwhile, the industry was facing critical situations in other areas last week.

On the West Coast, operating engineers, who started walkouts on a few projects June 20, severely hit construction in 11 southern California counties after negotiations, which had commenced in mid-March, broke down. In retaliation against those who struck, the four contractor groups, comprising 1,700 members and handling 90% of all construction in the area, shut down all work for engineers, announcing that a "strike against any member is a strike against all." Despite the strike, negotiations were continuing with the union demanding a regrouping of classifications, plus hourly wage increases ranging from 10 to 30 cents under a one-year contract. Contractors have offered boosts averaging 22½ cents spread over a two-year period.

Cement finishers in Oregon and southeast Washington voted strike authority as they stood firm in demands for a 15-cent hike which would raise the journeymen's scale to $2.85. And in Buffalo, N. Y., where commercial construction was just getting out from under two major strikes, a two-week old strike of sheet metal workers, who were demanding 7½ cents now with more later, was creating a serious shortage of sheet metal supplies.

Akron, Ohio, was still hit by striking bricklayers, who have been out since June 6. Having refused to come in with the other trades who negotiated as a group, they are demanding 10 cents under a one-year contract. The earlier settlement of a two-year contract with 8-cent boosts each year for 17 of the trades carried with it an understanding that those wage rates would be later increased to match whatever additional gains were won by unions that preferred "to go it alone." Meanwhile, the AGC was sporadically picketing contractors who continued to use striking bricklayers at premium rates.

• **Some strikes settled**—Happier notes, however, were struck in some areas.

Construction workers in Rochester, N. Y., were returning to work, following settlement of the carpenters' strike which started May 10, idling 9,000 men in a five-county area. The union accepted a 20-cent increase (had demanded 25 cents), raising the hourly scale to $3.10.

In Reno, Nev., work stoppages, which had hampered construction for 33 days, were halted by a two-year contract with the plumbers, granting an immediate 25-cent increase. And in Portland, Ore., carpenters were back at work following a 26-day strike, after the AGC and Home Builders had agreed to grant the full 10-cent demand.

## California Unit Joins ESA

The Southern California Professional Engineering Association, representing approximately 3,600 engineers, has affiliated with Engineers & Scientists of America. Mail ballot results indicated that about 60% voted in favor of the affiliation.

The SCPEA was one of the groups that participated in the two ESA founding conventions in Chicago in 1952. It had, however, previously declined an alliance with ESA, preferring not lose its autonomy by joining a national group (ENR April 23, 1953, p. 31).

## OFFICIAL PROPOSALS

Bids: July 21, 1955

### New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.,—Pursuant to the provisions of the Highway Law, Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 21st day of July 1955, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

| County | Contract No. | Name | Miles | Type | Deposit | Estimated Cost of Work |
|---|---|---|---|---|---|---|
| DISTRICT No. 1, N. F. Ronan, Acting District Engineer, 353 Broadway, Albany, N. Y. | | | | | | |
| Warren and Essex | FARC 55-44 | Loon Lake-Pottersville-Taylors, S. H. 692 Taylor-Schroon Lake Village, S. H. 745 Proj. F-383(10) | 7.81 | 9" Cem. Conc. Pavt. 24' Wide = 7.78 Mi. Asp. Conc. Opt. = 0.03 Mi. | $100,000 Plans $25 | $1,814,000 |
| DISTRICT No. 2, Lacy Ketchum, District Engineer, 109 No. Genesee St., Utica, N. Y. | | | | | | |
| Madison | FARC 55-48 | Syracuse Turnpike, Pt. 1 S. H. 9023 Syracuse Turnpike, S. H. 337, Syracuse Turnpike, Pt. 3 S. H. 9022 Proj. F-470(18); S-769(2) | 3.94 | Asphalt Concrete, Optional | $45,000 Plans $15 | 839,000 |
| Herkimer | M.T. 55-5 | New York State Thruway Mohawk Section—Subdivision 11A and 12A At Sites of Indian Castle Gas Station-Restaurant, Types A and CM | — | Grading, Paving and Misc. Work | $27,000 Plans $10 | 491,000 |
| DISTRICT No. 3, Wm. Robinson, District Engineer, Weigh Lock Building, Syracuse, N. Y. | | | | | | |
| Onondaga..... | FARC 55-45 | Baldwinsville-Cold Spring, S. H. 671 Project S-405(1) | 3.77 | Asphalt Concrete, Optional | $22,000 Plans $10 | 405,000 |
| Cayuga | FARC 55-50 R.C. 55-51 | Auburn-Elbridge, S. H. 592 Project F-441(4) | 5.53 | Asphalt Concrete, Type 1A | $20,000 Plans $10 | 351,000 |
| DISTRICT No. 4, E. G. H. Youngmann, District Engineer, Barge Canal Terminal, Rochester 1, N. Y. | | | | | | |
| Monroe | LOSP 55-1 | Lake Ont. State Parkway Sect. D (Dewey Ave. Interchange) | 0.21 | Grading and Drainage Hy. Sep. Comp. I-Beam 75.2' | $19,000 Plans $10 | 332,000 |
| Monroe | LOSP 55-2P | Lake Ont. State Parkway Sects. B-C-D (Paving) (Long Pond Road and Ramps) | 5.62 (2.82) (Acc.) | Asp. Conc. Opt.=8.23 Mi. Misc. Work = 0.21 Mi. R. C. Rig. Frame Hy. Sep. 98' | $115,000 Plans $50 | 1,926,000 |
| DISTRICT No. 5, C. R. Waters, District Engineer, State Office Building, 65 Court St., Buffalo, N. Y. | | | | | | |
| Chautauqua | FARC 55-53 | Kennedy-Ellington, S. H. 9071 Project S-453(1) | 4.13 | Asp. Conc., Optional | $27,000 Plans $15 | 488,000 |
| Chautauqua | E. T. 55-2 S.T. 55-3 | New York State Thruway-Erie Section-Sub. E-3A (Brockton to Pomfret Town Line); Lake Road; Berry Road; Van Buren Road; Chestnut Street; Lowell Road and Farel Road | 5.28 (1.07) (Acc.) | 9" Two Course Cem. Conc. Pavt. 2 @ 25' Wide = 5.26 Mi. Bit. Mac. Ty. 1 = 0.79 Mi. Surface Treated Gravel = 0.28 Mi. Misc. Work = 0.02 Mi. 4 Hy. Seps. Comp. I-Beams 306', 376.7', 296.5', 291' 3 Brs. Twin Boxes 36', 36' and 28' 1 Br. Comp. I-Beam 154' | $270,000 Plans $100 | 4,894,000 |
| DISTRICT No. 7, R. W. Sweet, District Engineer, 444 Van Duzee St., Watertown, N. Y. | | | | | | |
| Clinton, Franklin, Jefferson and Lewis | R.C. 55-46 | Br. No. 1, S. H. 930; Br. No. 1 and No. 2, S. H. 5647, Br. No. 4, S. H. 1089 Br. No. 1, S. H. 5332A, Br. No. 4, S. H. 1908 and Br. No. 1, S. H. 8337 Br. No. 1, S. H. 1252 | — | Cleaning and Painting 8 Bridges | $1,100 Plans $10 | 20,000 |
| DISTRICT No 8, J. S. Bixby, District Engineer, Pleasant Valley Road, Poughkeepsie, N. Y. | | | | | | |
| Rockland | C.T. 55-8 | New York State Thruway-Catskill Section-Subdivision 7 at Sites of Sloatsburg Gas Station-Restaurant (Types AA and CM) | — | Grading Paving and Misc. Work | $35,000 Plans $15 | 680,000 |
| Orange | FASS 55-3 | Thompson Ridge-Sullivan County Line, County Road No. 48 Project S-415(1) | 2.89 | Foundation Course Gravel (Double Surface Treatment) = 2.82 Miles, Grading = 0.07 Miles | $10,000 Plans $10 | 176,000 |
| Dutchess | FARC 55-47 | South, S. H. 223 Project U-394(12) | 1.65 | Asp. Conc., Optional | $30,000 Plans $10 | 538,000 |
| Rockland | PIP 55-1 RC 55-52 | Palisades, Int Parkway, Sect. 2 (Route 303 to Convent Road) New Jersey State Line-Congers Pt. 1, S. H. 1898 | 2.10 (0.53) (Acc.) | Grading and Structures = 1.76 Miles 9" Cem. Conc. Pavt = 0.34 Mi. Asp. Conc., Opt.= 0.53 Mi. 1 Br Sep. Comp. I-Beam 204.3' 3 Hy. Seps. Rig. Frames 136.5', 46.7' & 149' | $180,000 Plans $50 | 3,306,000 |
| DISTRICT No. 9, F. W. Donovan, District Engineer, 71 Frederick St., Binghamton, N. Y. | | | | | | |
| Otsego | R.C. 55-53 | East Springfield-Cherry Valley, S. H. 934 Cherry Valley-Sharon Springs, Sharon Springs-Canajoharie, Pt. 1, S. H. 8064 | 6.39 | Asp. Conc., Opt. | $14,000 Plans $10 | 255,000 |
| Schoharie | FARC 55-49 | Middleburg-Franklinton, Pt. 2, S. H. 8340 Livingstonville-Preston Hollow, Pts. 1 and 2, S. H. 8377 Project F-491(4) | 6.46 | Asp. Conc., Opt. | $45,000 Plans $10 | 769,000 |
| DISTRICT No. 10, M. E. Goul, District Engineer, Montauk Highway, at Little East Neck Road, Babylon, L. I., N. Y. | | | | | | |
| Nassau | PSC 7278-8966 | Elimination of Grade Crossings of the Long Island Railroad with Various Streets in the Hamlet of Baldwin and Village of Freeport. | 0.35 (1.56) (R.R.) | Railroad Relocation = 1.56 Miles Asp. Conc., Opt. = 0.26 Mi. Cem. Conc. Pavt. = 0.09 Mi. 4 Plate Girders 86', 85.5', 69' and 76.5' 1 Viaduct and Station 920' | $158,000 Plans $100 | 2,888,000 |
| Suffolk | SMSP 55-1 | Sunken Meadow Spur Parkway (Contract No. 6) | 7.02 (4.06) (Acc.) | 8" Cem. Conc. Pavt. 2 @ 25' Wide = 4.81 Miles Asp. Conc., Opt.= 0.07 Mi. Misc. Work = 2.14 Mi. Acc. Rds. Cem. Conc. Pavt. = 3.81 Miles Acc. Rds. Asp. Conc., Opt. = 0.25 Miles | $140,000 Plans $50 | 2,514,000 |
| Suffolk | B. P. 55-12 | Beach Protection at Cedar Beach, North Shore, Town of Brookhaven | — | 4 Concrete Block Groins and Timber Bulkhead | 5% of Bid Plans $10 | 93,700 |

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Instructions to Bidders."

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

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Bids: July 26, 1955

### Power Authority of The State of New York

ADVERTISEMENT FOR PROPOSALS
FOR
CONSTRUCTION OF
MASSENA INTAKE
NEAR MASSENA, ST. LAWRENCE
COUNTY, NEW YORK
SPECIFICATION NO. PA-5-11004
ST. LAWRENCE CONTRACT NO. 16

NOTICE TO CONTRACTORS: The POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the construction of Massena Intake and appurtenant works near the village of Massena, St. Lawrence County, New York, in the following ways:

(1) If brought in person on the day of receiving bids until 10:30 A. M. Eastern Daylight Saving Time on the 26th day of July, 1955 at 270 Broadway, Hearing Room C on the 6th Floor, New York, New York.

(2) If mailed in, until 10:15 A. M. Eastern Daylight Saving Time on the 26th day of July, 1955 at the Authority's office, 270 Broadway, Room 1300, New York 7, New York.

The proposals will be publicly opened and read aloud at the time and at the address given in (1) above.

The principal items of work are:

Estimated:

| | |
|---|---|
| 2,393,500 cu. yds. | Excavation, Common |
| 13,200 cu. yds. | Excavation, Rock |
| 5,000 lin. ft. | Drill Holes for Exploration and Grouting |
| 821,500 cu. yds. | Embankments and Protection Stone |
| 149,900 cu. yds. | Concrete |
| 20,000 pounds | Miscellaneous Steel |
| 1,350,000 pounds | Erection of Gates, Stop Logs, Hoists, Guides and Appurtenances |

The work shall be completed on or before October 1, 1957.

Plans, specifications and Proposal Forms for the work will be on file in the Authority's office and in the offices of the Engineer, Uhl, Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, and the Hydro-Electric Power Commission of Ontario, 620 University Avenue, Toronto 2, Ontario, may be inspected by prospective bidders during office hours and may be obtained from the Power Authority of the State of New York, 270 Broadway, Room 1300, New York 7, New York, upon application and prepayment of a fee of Twenty-five ($25.00) dollars per initial set and Ten ($10.00) dollars per set for additional sets no part of which will be refunded.

Bids must be made in duplicate in accordance with instructions contained in the Information for Bidders. Guarantee will be required with each bid in an amount not less than 10 percent of the gross sum bid except that guarantee in excess of $2,000,000 will not be required.

The right is reserved to reject any or all bids.

W. S. CHAPIN
6/30/55 GENERAL MANAGER

## OFFICIAL PROPOSALS

COMMONWEALTH OF MASSACHUSETTS. Department of Public Works. NOTICE TO CONTRACTORS. Sealed proposals for elimination of the Boston & Maine Railroad Grade Crossing at Mill and Norman Streets in the City of SALEM comprising demolition of buildings, permanent underpinnings of buildings, construction of underground structure, station platform, pedestrian overpass, retaining walls, ventilation structure with equipment, relocation of sewer and water systems, street paving, and other associated work will be received at Room 427, 100 Nashua Street, Boston, Mass., until 2:00 P.M. of TUESDAY, August 9, 1955, and at that place and time publicly opened and read. Proposal guaranty: $100,000. Charge for plans and proposal forms: $50.00; amount returnable only to bidders. Complete information at said office; plans on display at District offices. Plans and specifications available on or after July 1, 1955. Minimum wage and dump-truck rates have been established. Right reserved to waive any informality in or reject any or all proposals. An award will not be made to a Contractor who is not equipped to undertake and complete the work. By: JOHN A. VOLPE, Commissioner of Public Works. June 25, 1955.

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Bids: July 27, 1955

### *Indiana Toll Road Commission*
### *309 W. Washington Street*
### *Old Trails Building*
### *Indianapolis, Indiana*

NOTICE TO BIDDERS

Contract T.P.-2 and R.L.-2

Sealed proposals will be received by the Indiana Toll Road Commission at or before 10:00 A.M., Central Standard Time, July 27, 1955, for the performance of the Contract enumerated above, which is to be bid in combination.

Toll Plaza Contract T.P.-2 and R.L.-2 consists of the construction, at each of the following locations, of a utility building, toll booths and canopies, toll islands, roadway paving and roadway snow melting system within the Plaza . Construction Limits, finish grading, parking area paving, seeding, sodding, sewage disposal, water supply, standby electric generator set, plumbing, mechanical and electrical work required for the operation of the entire Work and empty conduit systems necessary for installation and operation of toll collection and communication systems and of a roadway lighting system for the Toll Plaza area, for the interchange ramps and for the acceleration and decleration lanes at the Western Terminal as shown on the Plans and specified in the Standard Specifications, Supplemental specifications for Toll Plazas and Roadway Lighting and Special Provisions.

The Work covered by Contract T.P.-2 and R.L.-2 consists of construction at the following Toll Plaza locations:

1. Western Terminal Interchange in the vicinity of 141st Street and Calumet Avenue in Hammond, Indiana.
2. U. S. 12 & 20 Interchange in Gary, Indiana.
3. State Route 49 Interchange in the vicinity of Chesterton, Indiana.
4. U. S. Route 421 Interchange North of Westville, Indiana.
5. State Route 39 Interchange North of Laporte, Indiana.
6. U. S. Route 31 Interchange at Roseland, Indiana.

Copies of the Plans, Standard Specifications, Supplemental Specifications for Toll Plazas and Roadway Lighting and Proposal Forms for said Contracts are available for public inspection or purchase at the office of the Chief Engineer, Indiana Toll Road Commission, 309 W. Washington Street, Indianapolis, Indiana. These documents may be purchased from said Chief Engineer for the following sums, per set, which sums are non-returnable:

| | |
|---|---|
| Standard Specifications for the Indianapolis East-West Toll Road | $ 5.00 |
| Supplemental Specifications for Toll Plazas and Roadway Lighting | 5.00 |
| Plans and Proposal Forms, per set | 30.00 |
| INFORMATION DRAWINGS | |
| Cross Sections for Toll Plazas, per set | 10.00 |

All Proposals must be on the form prescribed by the Commission and must comply with the terms and conditions set forth in the Contract Documents.

Contractor's statement for qualification on the forms supplied by the Commission will be required from all Bidders.

Each Proposal must be accompanied by a Proposal Guaranty in the amount of five (5%) per cent of the total price bid in the Proposal covered by the Contract. The Proposal Guaranty shall be in the form of an acceptable surety bond or a certified check on a solvent bank.

If the Bidder is an out of state corporation, he shall be required to furnish a certificate from the Secretary of State of Indiana as evidence that the corporation has complied with the Indiana Foreign Corporation Statutes, and that the corporation is authorized to transact business in the State of Indiana.

All bids must be received at or before 10:00 A.M., Central Standard Time, July 27, 1955, in the offices of the Indiana Toll Road Commission, 309 W. Washington Street, Indianapolis, Indiana. At said hour, the bid box will be publicly opened and the bids read.

The award of the above Contract, if any award be made, will be to the Bidder or Bidders whose Proposal is lowest and best for the performance of the Work, taken as a whole, and complies with all the prescribed requirements. The Commission reserves the right to reject any or all Proposals and to waive technicalities.

INDIANA TOLL ROAD COMMISSION
Dr. Dillon Geiger
Chairman

Charles W. Keating
Secretary-Treasurer

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Bids: August 23, 1955

### *School Construction*

1. The Board of Education, Central School District No. 1 of the Towns of Kinderhook, Stuyvesant, Stockport, Ghent, Chatham, of Columbia County, Schodack and Nassau, of Rensselear County, State of New York, will receive separate sealed bids for the (1) General Construction, (2) Plumbing, (3) Heating and Ventilation and (4) Electric Work for the Ichabod Crane Central School to be built in the Township of Kinderhook, Columbia County, State of New York, until 7:30 P.M., E.D.S.T., Tues., Aug. 23, 1955 at which time all bids will be publicly opened and read.

2. Plans and specifications will be furnished to contractors bidding on the General Construction, Plumbing, Heating and Ventilation, and Electric Work by the Architect, John H. Fisher, 29 Wendell Ave., Pittsfield, Mass. upon receipt of a deposit of $50.00 for each set. This sum will be returned to the bidder upon return of these documents in good condition and provided the contractor submits a bona fide bid. If no bid is submitted, a deduction of $25.00 will be made for each set upon its return. Subcontractors and materialmen who desire plans and specifications may obtain copies from the Architect by paying the reproduction cost of their copies. Complete sets will be on file at:

(a) Dodge Reports
119 W. 49th St., N.Y.C.
(b) Dodge Reports
858 Park Sq. Bldg., Boston, Mass.
(c) Albany Builders Exchange
790 Central Ave., Albany, N. Y.

3. Each bid submitted shall be accompanied by a bid bond or certified check made payable to Board of Education, Ichabod Crane Central School in the amount of 5% of the bid. The successful bidder shall deliver to the Board of Education a performance bond in the full amount of the contract. All bids are to be firm and no bidder may withdraw his bid within thirty (30) days after opening of the bids.

4. All bidders shall be familiar with and comply with all labor laws, wage rates and conditions of employment of the State of New York.

5. The preliminary estimated cost of work is:

| | |
|---|---|
| (a) General Construction | $720,000 |
| (b) Plumbing | $ 50,000 |
| (c) Heating and Ventilation | $130,000 |
| (d) Electric Work | $100,000 |

6. The Board of Education reserve the right to waive any informality in the bidding or to reject any or all bids or to accept the bids and alternates considered by them to be in their best interest.

7. The project will be financed by the Central School District No. 1, of the Towns of Kinderhook, Stuyvesant, Stockport, Ghent, Chatham, of Columbia County, Schodack and Nassau, of Rensselaer County, of the State of New York.

Ralph Duck, President,
Board of Education.

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Bids: July 21, 1955

### *Contract O & M 305*

THE PORT OF NEW YORK AUTHORITY
INSTALLATION OF DOMESTIC HOT WATER HEATER
PORT AUTHORITY BUILDING
PROPOSAL NO. 633

Sealed proposals for the installation of domestic hot water heater in the Port Authority Building, 111 Eighth Ave., New York 11, will be received in the office of the Director of Purchase of The Port of New York Authority, Room 900, 111 Eighth Ave., New York 11, until 11:00 A.M., Thursday, July 21, 1955, at which time and place proposals will be opened and read.

Contract documents may be obtained upon request at the office of the Director of Purchase.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

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Bids: July 26, 1955

### *Contract EXD-130.019*

ADVERTISEMENT
THE PORT OF NEW YORK AUTHORITY
PORT AUTHORITY BUILDING
SECOND FLOOR ALTERATIONS

Sealed proposals for performing alterations to the westerly portion of the second floor of the Port Authority Building at 111 Eighth Avenue, New York 11, N. Y., will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, July 26, 1955, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Materials of the Authority, Room 1112. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1112, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, July 7, 1955

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Bids: July 26, 1955

### *Contract NYA-720.001*

ADVERTISEMENT
THE PORT OF NEW YORK AUTHORITY
NEW YORK INTERNATIONAL AIRPORT
RECIRCUITING AND REPLACEMENT OF CABLE
RUNWAY 13L-31R

Sealed proposals for recircuiting of runway lights for Runway 13L-31R at New York International Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, July 26, 1955, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Materials of the Authority, Room 1112. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1112, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, July 7, 1955

OFFICIAL PROPOSALS

Bids: July 20, 1955

## Pennsylvania Turnpike Commission
## Harrisburg, Pennsylvania

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania until 11:00 a.m. Eastern Daylight Saving Time, the 20th day of July 1955, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room #1, North Office Building, State Capitol, Harrisburg, Pennsylvania and publicly opened and read aloud for the following contracts.

For the Construction of Plumbing System for the following Maintenance Building on the Pennsylvania Turnpike:

| Contract No. | Maintenance Building | Station | County |
|---|---|---|---|
| 172-A | Newville Maintenance Building | 678+89 | Cumberland |
| 250-A | Additions to Bowmansville Maintenance Building | 1281+95 | Lancaster |

The work to be performed under this contract is generally in and around the Maintenance Building above-mentioned and enumerated. The work does not include the Electrical Systems, the Heating Systems nor building construction except as noted in the specifications or as shown on the Contract Drawings.

Copies of plans, specifications and Contract Documents are on file and open to public inspection on 30 June 1955 at the offices of the Pennsylvania Turnpike Commission in Harrisburg, Pennsylvania. Plans, specifications and other contract documents will not be available before this date for inspection or for mailing to prospective bidders.

Plans and contract documents may be obtained from the Commission upon deposit of ten ($10.00) dollars for each set. No refund will be made for plans returned, unless the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Remittances are payable by check or P. O. money order to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications and contract documents.

Copies of Specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of five ($5.00) dollars per copy.

The character and amount of bid security to be furnished by bidder is stated in the Instructions to Bidders.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

The Pennsylvania Turnpike Commission reserves the right to waive any informalities in or to reject any or all bids.

PENNSYLVANIA TURNPIKE COMMISSION
James F. Torrance
Secretary and Treasurer

Harrisburgh, Pennsylvania
22 June 1955

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Bids: July 20, 1955

## Pennsylvania Turnpike Commission
## Harrisburg, Pennsylvania

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania until 11:00 a.m. Eastern Daylight Saving Time, the 20th day of July 1955, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room #1, North Office Building, State Capitol, Harrisburg, Pennsylvania and publicly opened and read aloud for the following contracts:

For the construction of Heating System for the following Maintenance Building on the Pennsylvania Turnpike:

| Contract No. | Maintenance Building | Station | County |
|---|---|---|---|
| 172-B | Newville Maintenance Building | 678+89 | Cumberland |
| 250-B | Additions to Bowmansville Maintenance Building | 1281+95 | Lancaster |

The work to be performed under this contract is generally in and around the Maintenance Building above-mentioned and enumerated. The work does not include the Electrical System, the Plumbing Systems nor building construction except as noted in the specifications or as shown on the Contract Drawings.

Copies of plans, specifications and Contract Documents are on file and open to public inspection on 30 June 1955 at the offices of the Pennsylvania Turnpike Commission in Harrisburg, Pennsylvania. Plans, specifications and other contract documents will not be available before this date for inspection or for mailing to prospective bidders.

Plans and contract documents may be obtained from the Commission upon deposit of ten ($10.00) dollars for each set. No refund will be made for plans returned, unless the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Remittances are payable by check or P. O. money order to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications and contract documents.

Copies of Specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of five ($5.00) dollars per copy.

The character and amount of bid security to be furnished by bidder is stated in the Instructions to Bidders.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

The Pennsylvania Turnpike Commission reserves the right to waive any informalities in or to reject any or all bids.

PENNSYLVANIA TURNPIKE COMMISSION
James F. Torrance
Secretary and Treasurer

Harrisburg, Pennsylvania
22 June 1955

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Bids: August 2, 1955

## West Delaware Tunnel
## Contracts 451, 452, 453, 454 and 455

SEALED BIDS will be received by the Board of Water Supply, at its offices, thirteenth floor, 120 Wall Street, New York City, until 11:00 A.M., Eastern Daylight Saving Time (10:00 A.M., Eastern Standard Time), on Tuesday, August 2, 1955, for the following five contracts for the construction of the West Delaware Tunnel of the Delaware System, comprising about 44 miles of concrete lined pressure tunnel, circular in section and 11 feet 4 inches in finished diameter, and Shafts 1 to 7, inclusive, 14 feet in diameter, which will be circular in section and lined with concrete, all as set forth in the specifications, as follows:

CONTRACT 451, for the construction of about 43,000 linear feet of tunnel, including an intake channel and Shaft 1, approximately 520 feet deep, located in the Towns of Tompkins and Hancock, Delaware County, New York.

CONTRACT 452, for the construction of about 60,000 linear feet of tunnel, including Shaft 2, approximately 310 feet deep, and Shaft 3, approximately 460 feet deep, located in the Towns of Hancock and Colchester, Delaware County, New York.

CONTRACT 453, for the construction of about 26,000 linear feet of tunnel, including Shaft 4, approximately 380 feet deep, located in the Towns of Colchester, Delaware County, and Rockland, Sullivan County, New York.

CONTRACT 454, for the construction of about 60,000 linear feet of tunnel, including Shaft 5, approximately 760 feet deep, and Shaft 6, approximately 780 feet deep, located in the Towns of Rockland and Neversink, Sullivan County, New York.

CONTRACT 455, for the construction of about 42,000 linear feet of tunnel, including Shaft 7, approximately 650 feet deep, and the tunnel outlet, located in the Town of Neversink, Sullivan County, New York.

A bidder on two or more of the five contracts may, if he so desires, specify in the bid form a percentage reduction from the total cost of the particular contract for which he is then bidding, which he will agree to make if he is awarded that contract together with one or more of the other four contracts.

Pamphlets of the five contracts containing information for bidders, forms of bid and contract, specifications, contract drawings, requirements as to surety, etc., can be obtained in Room 1317, at the above address, upon application in person or by mail, by depositing the sum of $5.00 in cash or its equivalent for each pamphlet. Within 30 days following the award of contract or rejection of bids the full amount of such deposit will be refunded for each pamphlet submitted as a bid and a refund of $4.00 will be made for each other pamphlet returned in acceptable condition. Arrangements will be made whereby prospective bidders desiring blueprints of the contract drawings for their own use may secure same, the cost thereof to be paid by them. For further particulars, apply at the office of the Chief Engineer at the above address.

IRVING V. A. HUIE, President, EDWARD C. MAGUIRE, HERBERT M. ROSENBERG, Commissioners; Board of Water Supply; BETTY COHEN, Acting Secretary.

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Bids: July 20, 1955

## Pennsylvania Turnpike Commission
## Harrisburg, Pennsylvania

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania until 11:00 a.m. Eastern Daylight Saving Time, the 20th day of July 1955, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room #1, North Office Building, State Capitol, Harrisburg, Pennsylvania and publicly opened and read aloud for the following contracts:

| Contract No. | Maintenance Building | Station | County |
|---|---|---|---|
| 172 | Newville Maintenance Building | 678+89 | Cumberland |
| 250 | Additions to Bowmansville Maintenance Building | 1281+95 | Lancaster |

The work to be performed under these contracts consists of the construction of the Maintenance Building, or Additions to the Maintenance Building, at points on the Turnpike listed above, not including however, the plumbing, the heating systems, the electrical work, the paving, or the seeding and sodding; except as noted in the specifications or as shown on the Contract Drawings.

Copies of plans, specifications and Contract Documents are on file and open to public inspection on 30 June 1955 at the office of the Pennsylvania Turnpike Commission in Harrisburg, Pennsylvania. Plans, specifications and other contract documents will not be available before this date for inspection or for mailing to prospective bidders.

Plans and contract documents may be obtained from the Commission upon deposit of ten ($10.00) dollars for each set. No refund will be made for plans returned, unless the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Remittances are payable by check or P. O. money order to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications and contract documents.

Copies of Specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of five ($5.00) dollars per copy.

The character and amount of bid security to be furnished by bidder is stated in the Instruction to Bidders.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

The Pennsylvania Turnpike Commission reserves the right to waive any informalities in or to reject any or all bids.

PENNSYLVANIA TURNPIKE COMMISSION
James F. Torrance
Secretary and Treasurer

Harrisburgh, Pennsylvania
22 June 1955

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Bids: July 20, 1955

## Bear Mountain State Park

Sealed bids will be received by the Palisades Interstate Park Commission, Administration Headquarters, Bear Mountain, New York, until 3:00 P.M., E.D.S.T., July 20, 1955, for a Roller-Ice Skating Rink in the Bear Mountain State Park, Rockland County, New York.

Full information, specifications and proposals may be secured at Administration Headquarters, Bear Mountain, New York. Plans cost Ten ($10.00) Dollars.

THE COMMISSION RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS RECEIVED.

## OFFICIAL PROPOSALS

Bids: July 13, 1955

### *Indiana Toll Road Commission*
### *309 W. Washington Street*
### *Old Trails Building*
### *Indianapolis, Indiana*

NOTICE TO BIDDERS

CONTRACTS NOS. SA-1, SA-3, SA-5, SA-7 and S-8
REVISED JUNE 22, 1955

Sealed proposals will be received by the Indiana Toll Road Commission at or before 10:00 A.M., Central Standard Time, July 13, 1955, for the performance of each of the contracts enumerated above.

CONTRACTS NOS. SA-1, SA-3, SA-5, SA-7 and SA-8

The complete construction of all, any one, or any combination of the Service Areas including Site Improvements; General Construction of Buildings; Plumbing, Drainage and Fuel Tanks; Heating, Ventilating and Air Conditioning; Refrigeration; Electrical Light and Power; Kitchen Equipment; Furniture; Sanitary Sewage and Water Supply with all Structures and Treatment Plants, and related work located approximately as follows:

SA-1—Located near East Gary in Porter County

SA-3—Located near Rolling Prairie in LaPorte County

SA-5—Located near Elkhart in Elkhart County

SA-7—Located near Brighton in LaGrange County

SA-8—Located near Fremont in Steuben County

This is a readvertisement of the Service Area Contracts previously advertised for the bid opening date of June 15, 1955 for which all bids have been rejected by the Commission. The Contract has been modified in the following manner:

1. Bids will be received for the construction of all Service Areas, any one Service Area, or any combination of the five (5) Service Area Construction Contracts.

2. The total construction time has been increased.

3. The liquidated damage clause has been modified.

4. The area and the thickness of the paved area has been decreased.

Previous purchasers of Plans will be sent the Supplemental drawings and the Revised Proposals without additional costs.

Copies of the Revised Plans, Specifications and Revised Proposal Forms for said Contracts are available for public inspection or purchase at the office of the Chief Engineer, Indiana Toll Road Commission, 309 W. Washington Street, Indianapolis, Indiana. These documents may be purchased from said Chief Engineer for the following sums, per set, which sums are non-returnable:

NOTICE TO BIDDERS

Standard Specifications for the Service Areas ..... $ 5.00
Revised Plans and Revised Proposal Forms for the Service Areas. $50.00

Copies of the Plans, Standard Specifications and Revised Proposal Forms for said Contracts are also available for public inspection at the following locations:

Indiana Toll Road Commission, 321 W. Jefferson St., South Bend, Ind.

J. E. Greiner Co., 416 W. LaSalle Ave., South Bend, Ind.

Chas. W. Cole & Son, 220 W. LaSalle Ave., South Bend, Ind.

F. W. Dodge Corp., 700 Merchandise Mart, Chicago 54, Ill.

F. W. Dodge Corp., 418 Architect & Builder's Bldg., Indianapolis, Ind.

All Proposals must be on the form prescribed by the Commission and must comply with the terms and conditions set forth in the Contract Documents.

Contractor's statement for qualification on the forms supplied by the Commission will be required from all Bidders.

Each Proposal must be accompanied by a Proposal Guaranty in the amount of five (5%) per cent of the total price bid per Construction Contract covered by the Contract. If the Bidder shall tender bids for two or more Contracts which include the same Construction Contract, the Construction Contract thus duplicated in the bidding need be counted only once in determining the total amount of the Proposal Guaranty. The Proposal Guaranty shall be in the form of an acceptable surety bond or certified check on a solvent bank.

If the Bidder is an out of state corporation, he shall be required to furnish a certificate from the Secretary of State of Indiana as evidence that the corporation has complied with the Indiana Foreign Corporation Statutes and that the corporation is authorized to transact business in the State of Indiana.

All bids must be received at or before 10:00 A.M., Central Standard Time, July 13, 1955, in the offices of the Indiana Toll Road Commission, 309 W. Washington Street, Indianapolis, Indiana. At said hour, the bid box will be publicly opened and the bids read.

The award of any of the above-enumerated Contracts, if any award be made, will be to the Bidder or Bidders whose Proposal or combination of Proposals is lowest and best for the performance of the work, taken as a whole, and complies with all the prescribed requirements. The Commission reserves the right to reject any or all Proposals and to waive technicalities.

INDIANA TOLL ROAD COMMISSION
Dr. Dillon Geiger
Chairman

Charles W. Keating
Secretary-Treasurer

Bids: July 20, 1955

### *Pennsylvania Turnpike Commission*
### *Harrisburg, Pennsylvania*

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania, until 10:00 a.m., Daylight Saving Time, the 20th of July 1955, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room No. 1, North Office Building, State Capitol, Harrisburg, Pennsylvania, and publicly opened and read aloud for the following contract:

For the construction of the substructure of the Clark Summit Bridge, part of the Northeastern Extension of the Pennsylvania Turnpike in South Abington Township, Lackawanna County, Commonwealth of Pennsylvania. This section being situated as follows:

Beginning at a point approximately 712 feet southwest of the center line of Legislative Route 9 at Turnpike Station 614+82.083 in South Abington Township, Lackawanna County; thence in a Northeasterly direction 1643.83 feet to Turnpike Station 631+25.917 at a point approximately 931 feet northeast of center line of Legislative Route 9 in South Abington Township, Lackawanna County, a distance of approximately 0.3 miles.

The approximate quantities of the principal items for the Clark Summit Bridge substructure are as follows:

Class 1 Excavation ..... 324 cubic yards
Class 2 Excavation ..... 7,380 cubic yards
Class A Concrete in Pier Bases and Abutment Footings ..... 2,602 cubic yards
Class A Concrete in Pier Shafts and Cross-Beams and Abutment Walls and Wing Walls ..... 5,240 cubic yards
Reinforcement Bars in Place ..... 1,280,000 pounds
Structural Steel in Place..... 2,400 pounds
H-Beam Bearing Piles (10BP42) ..... 4,616 lineal feet

Copies of plans and specifications and other contract documents, including cross-sections, are on file and open to public inspection at the office of the Pennsylvania Turnpike Commission located at Harrisburg, Pennsylvania 1 July 1955. Plans, specifications, cross-sections and other contract documents will be available by this date for inspection or for mailing to prospective bidders. Copies of Specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of five (5) dollars per copy. Copies of cross-sections will be furnished with the plans.

Plans, cross-sections, and contract documents for this section exclusive of specifications, may be purchased from the Pennsylvania Turnpike Commission for the sum of twenty (20) dollars for each set. No refund will be made for plans returned unless the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Remittances are payable by check or P.O. money order to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications, contract documents, and cross-sections.

The character and amount of bid security to be furnished by the bidder is stated in the Instructions to Bidders.

The Commission reserves the right to waive any informalities in or to reject any or all bids.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

PENNSYLVANIA TURNPIKE COMMISSION
James F. Torrance
Secretary and Treasurer

Harrisburg, Pennsylvania
22 June 1955

Bids: July 20, 1955

### *Pennsylvania Turnpike Commission*
### *Harrisburg, Pennsylvania*

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania until 11:00 a.m. Eastern Daylight Saving Time, the 20th day of July 1955, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room #1, North Office Building, State Capitol, Harrisburg, Pennsylvania and publicly opened and read aloud for the following contracts.

For the construction of Electrical System for the following Maintenance Building on the Pennsylvania Turnpike:

| Contract No. | Maintenance Building | Station | County |
|---|---|---|---|
| 172-C | Newville Maintenance Building | 678+89 | Cumberland |
| 250-C | Additions to Bowmansville Maintenance Building | 1281+95 | Lancaster |

The work to be performed under this contract is generally in and around the Maintenance Building above-mentioned and enumerated. The work does not include the Plumbing Systems, the Heating Systems nor building construction except as noted in the specifications or as shown on the Contract Drawings.

Copies of plans, specifications and Contract Documents are on file and open to public inspection on 30 June 1955 at the offices of the Pennsylvania Turnpike Commission in Harrisburg, Pennsylvania. Plans, specifications and other contract documents will not be available before this date for inspection or for mailing to prospective bidders.

Plans and contract documents may be obtained from the Commission upon deposit of ten ($10.00) dollars for each set. No refund will be made for plans returned, unless the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Remittances are payable by check or P.O. money order to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications and contract documents.

Copies of Specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of five ($5.00) dollars per copy.

The character and amount of bid security to be furnished by bidder is stated in the Instructions to Bidders.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

The Pennsylvania Turnpike Commission reserves the right to waive any informalities in or to reject any or all bids.

PENNSYLVANIA TURNPIKE COMMISSION
James F. Torrance
Secretary and Treasurer

Harrisburg, Pennsylvania
22 June 1955

## U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4462) will be received at Ephrata, Washington, until August 9, 1955, for furnishing labor and materials for earthwork, concrete lateral lining, and structures, North Part Block 89, Laterals, Wasteways, and Drains, West Canal Laterals, Columbia Basin Project, Washington Location near Ephrata, Washington. Principal items are 126,600 cu. yds. excavation; 2,140 cu. yds. concrete, 8,750 lin. ft. concrete pipe, 6- to 42-inch; 24 gates, metal slide gates; 3,700 pounds miscellaneous metalwork; and other work. Completion time 400 days. For particulars, address Bureau of Reclamation, P. O. Box 368, Ephrata, Washington; or Building 53, Denver Federal Center, Denver, Colorado. W. A. Dexheimer, Commissioner.

OFFICIAL PROPOSALS

Bids: July 28, 1955

## Integrated Sewerage System

FAIRFAX COUNTY, VIRGINIA
INTEGRATED SEWERAGE SYSTEM

Sealed bids will be received by the Board of County Supervisors of Fairfax County, Virginia, at the Office of the Sanitary Engineer, County of Fairfax, Fairfax, Virginia, until Thursday, July 28, 1955, at 2:00 o'clock, P.M. Eastern Daylight Time, for the construction of:

CONTRACT NO. 43: Dead Run Sewage Pumping Station

Plans, specifications, and contract documents may be examined and copies thereof may be obtained at the Office of the Sanitary Engineer, upon payment of $10.00 per set, which amount shall not be returnable.

Contractors, whether resident or non-resident in Virginia, will be required to show evidence of a Certificate of Registration as required by Chapter 7 of Title 54 of the Code of Virginia before their bids will be considered.

Each bid must be accompanied by cash, certified check, or bidder's bond in an amount not less than 5% of the amount of the total bid. The successful bidder will be required to furnish a performance and maintenance bond in a penal sum equal to the full contract price.

COUNTY OF FAIRFAX, VIRGINIA
By: Harry L. Hale
Sanitary Engineer

Dated: June 29, 1955

## Notice of Cancellation

WEST DELAWARE TUNNEL
CONTRACTS 451, 452, 453, 454, 455

Bid opening advertised for August 2, 1955 has been postponed.

IRVING V. A. HUIE, President, EDWARD C. MAGUIRE, HERBERT M. ROSENBERG, Commissioners, Board of Water Supply; BETTY COHEN, Acting Secretary.


**OFFICIAL PROPOSALS**

**RATE:** The rate for Official Proposal Advertising is $1.80 per line (or fraction) per insertion.

**COPY RECEIVED:** up to 10:30 A.M. Friday for issue out following Thursday subject to space open for last minute ads.

**SEND COPY:** to Official Proposal Division, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.


OFFICIAL PROPOSALS

Bids: August 3, 1955

## Water System Improvements

ADVERTISEMENT FOR BIDS

NOTICE IS HEREBY GIVEN that sealed proposals for furnishing all plant, labor, and materials for the construction of WATER SYSTEM IMPROVEMENTS in the City of Altoona, Blair County, Pennsylvania, will be received by the Altoona City Authority, at the Police Courtroom, in the City Hall, Altoona, Pennsylvania at 10:00 O'clock A.M. (E.D.S.T.) on Wednesday, August 3, 1955, at which time the proposals will be publicly opened and read aloud.

The work will be divided into five contracts, designated as:

CONTRACT NO. 16—Guniting Prospect and Super High Reservoirs, and foundations for three (3) Steel Tanks.

CONTRACT NO. 17—Furnishing and erecting three (3) Steel Storage Tanks (Two tanks to be 300,000 gallon capacity each and one tank to be 100,000 gallon capacity).

CONTRACT NO. 18—Transmission and Distribution Lines (Approximately 16,500 L.F. of 8" asbestos-cement or C.I. "Roll-on" joint pipe and approximately 57,500 L.F. of 10", 12", 16", 20" and 24" C.I. M.J. pipe, with related appurtenances, repaving, and miscellaneous work.

CONTRACT NO. 19—General Contract for Construction of Mill Run Dam and Reservoir. (Earth dam 1200 feet in length, 90 feet high, slope 1:3, with concrete spillway, concrete lined spillway discharge channel; concrete intake; cast iron outlet pipe; meter house; access road, and various items of related construction).

CONTRACT NO. 20—Electrical Work for Mill Run Dam and Reservoir and for Prospect Reservoir.

Information for Bidders, Form of Proposal, Form of Contract, Specifications and Plans pertaining to all contracts may be examined at the office of Lewis L. Gwin, Consulting Engineer, 1100 13th Avenue, Altoona, Pennsylvania, and at the office of Albright & Friel Inc., Consulting Engineers, 121 So. Broad Street, Philadelphia 7, Pennsylvania.

The above documents pertaining to Contracts Nos. 16, 17, 18 are contained in a single set of plans and specifications, which may be obtained at the office of Lewis L. Gwin, 1100 13th Avenue, Altoona, Pennsylvania, upon the deposit of One Hundred Dollars ($100.00) for each set of documents. Checks for such deposits are to be made out to Lewis L. Gwin.

The above documents pertaining to Contracts Nos. 19 and 20, may be obtained at the office of Albright & Friel Inc., 121 So. Broad Street, Philadelphia, Pennsylvania upon the deposit of Fifty Dollars ($50.00) for each set of documents. Checks for such deposits are to be made out to Albright & Friel Inc.

If the documents are returned in good condition to the office from which they were obtained within FIVE (5) days after opening of bids, the full amount of the deposit for one set will be refunded to each actual bidder, and other deposits will be refunded with a deduction of one-half of the deposit to defray the cost of reproduction of the documents. If the documents are not returned within the time stated, the entire amount of deposit will be forfeited.

Bids shall be submitted on the applicable Form of Proposal, which is to remain attached to the document, and shall be enclosed in an opaque sealed envelope addressed to: "The Altoona City Authority, City Hall, Altoona, Pennsylvania, Attention of: John H. Dillen, Secretary," and the envelope shall be plainly marked thus: "Bid for (Bidder shall insert Contract No. or Nos. and Contract Designation) for Altoona City Authority, Altoona, Pennsylcania", and the name of the bidder.

Each bid must be accompanied by a certified check or bid bond made payable to the ALTOONA CITY AUTHORITY, in amount equal to 5% of the total bid, as a guarantee

OFFICIAL PROPOSALS

that in case the contract is awarded to the bidder, he will within ten (10) days thereafter, execute such contract and furnish duly executed Performance and Labor Materialmen's Bonds.

The Altoona City Authority reserves the right to reject any or all bids, to accept or reject any or all sections or items of any bid, and to waive any informality in bids received, unless such bid is qualified by specific limitation. Conditional bids will not be accepted.

No bid may be withdrawn within sixty (60) days after the actual date of the opening thereof.

JOHN H. DILLEN
SECRETARY OF THE AUTHORITY

JUNE 20, 1955

Bids: July 20, 1955

## Refuse Disposal Plant

Notice to Bidders

1. Sealed proposals for performing all work in connection with the Building, Chimney, Plumbing, Heating and Electrical Work, Contracts II, III, IV, V, VI respectively, are hereby invited and will be received by the Board of Contract and Supply until 10:30 O'clock, Eastern Daylight Saving Time on July 20, 1955 in the Council Chambers, City Hall, Binghamton, N. Y. and there publicly opened and read immediately thereafter.
2. The work will consist of providing all labor, materials, equipment and incidentals and performing all operations required for the construction, complete and ready for municipal operation, of the Building, including all Foundations, Crane, Scale and Site Improvement, the Chimney, Plumbing, Heating, Electrical work and all related work All the above work will be coordinated with that of Furnaces and Appurtenances, Contract I, which contract has previously been awarded and for which off-site work is now under way.
3. Drawings, specifications, bidding and contract documents may be examined at the office of the Consulting Engineers, Leonard S. Wegman Co., Grand Central Terminal Building, New York 17, N. Y., or at the offices of the City Engineer at City Hall and obtained from the latter at a deposit of $25.00 per set. Checks shall be made payable to John E. Bloomer, Comptroller. Full refund will be made to actual bidders for return of each set in good condition within two weeks after closing date for receipt of bids.
4. Each bid must be accompanied by a Bid Security in the form of a certified check payable at sight to the Comptroller of the City of Binghamton in an amount not less than Three Percent (3%) of the amount of the total bid. Such Bid Security will be returned to all except the three lowest formal bidders within five (5) days after the formal opening of bids, and the remaining Bid Securities will be returned within two (2) days after the Owner and the accepted bidder have executed the contract, or if no contract has been executed, within thirty (30) days after the date of opening of bids, upon demand of Bidder at any time thereafter, so long as he has not been notified of acceptance of his bid. If the Bidder to whom contract is awarded does not execute the contract and furnish the required bond within fifteen (15) days after receipt of notice of award, the aforesaid Bid Security shall be paid to the City Treasurer as liquidated damages.
5. The Owner reserves the right to reject any or all bids, to waive any informality in bids received and to accept that bid which in its judgment best serves the interests of the city.

BOARD OF CONTRACT AND SUPPLY
BY William Chuma, Secretary

Sealed bids for new court rooms, alterations, etc., U. S. Post Office, Custom House and Court House, Cleveland, Ohio, will be received until 2:00 P.M., Central Standard Time, July 29, 1955, in Rm 575 U. S. Court House, 219 South Clark St., Chicago, Illinois, and then publicly opened in Rm. 575. Bidding material may be obtained from the Office of Regional Director, Rm. 575 U. S. Court House, 219 South Clark St., Chicago, Illinois or Public Buildings Service, Rm. 1304 General Services Bldg., 19th & F Sts., N. W., Washington 25, D. C. P. A. Strobel, Commissioner of Public Buildings, General Services Administration.

# EMPLOYMENT OPPORTUNITIES

The Advertisements in this section include all employment opportunities—executive, management, technical, selling, office, skilled, manual, etc.

**Positions Vacant**
**Positions Wanted**
**Part Time Work**

**Civil Service Opportunities....**
**Selling Opportunities Wanted**
**Selling Opportunities Offered**

**Employment Agencies**
**Employment Services**
**Labor Bureaus**

**DISPLAYED** ——**RATES**—— **UNDISPLAYED**

The advertising rate is $24.25 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

**An advertising inch** is measured ⅞" vertically on a column—3 columns—30 inches to a page.

Subject to Agency Commission.

**$1.80 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.**

**Box Numbers**—counts as 1 line.

**Discount of 10%** if full payment is made in advance for 4 consecutive insertions.

Not subject to Agency Commission.

Send NEW ADS to ENGINEERING NEWS RECORD, 330 W. 42nd St., N. Y. 36, N. Y. for July 21st issue closing July 11th

## DESIGN ENGINEERS

Permanent opportunities for qualified engineers experienced in design of:

**STRUCTURAL STEEL**
**REINFORCED CONCRETE**
**HEAVY MACHINES**

Applicable to design of Blast Furnaces, Ore Beneficiation Plants and similar heavy structures

*also*

**PIPING**
**DESIGN AND LAYOUT**

Applicable to Oil Refinery and Petro-Chemical Plant design

TOP EARNINGS—PENSION PLAN

*MANY OTHER BENEFITS*

*Please contact or write:*

Edward A. Kolner
**ARTHUR G. McKEE & CO.**
2300 Chester Ave. Cleveland 1, Ohio

## HIGHWAY DESIGN ENGINEERS

Minimum of 3 years' experience in design of highways and expressways and associated engineering for work in our air-conditioned St. Louis office.

Employee Benefit Plan, paid vacations, and holidays, sick leave, Blue Cross.

Please write to or inquire at

**SVERDRUP & PARCEL ENGINEERING COMPANY**

1134 Locust St. St. Louis 1, Mo.
1625 Eye St., N.W. Washington 25, D. C.

**SANITARY ENGINEER**

**Opportunity available for Sanitary Engineer in an expanding pulp and paper mill located in the Middle Atlantic States. Age 25-35 years. Require man experienced in paper mill wastes, paper mill stream pollution and paper mill water purification. No other experience will be given consideration. Good salary and advancement. All replies confidential. Send resume of educational background and industrial experience to Director of Personnel**
**West Virginia Pulp & Paper Company**
**Luke, Maryland**

## Sales Engineers

**A major steel company has need for sales engineers in its rapidly expanding prefabricated steel building division. Excellent opportunities for men 25 to 30 years old with engineering background and a desire for sales work. Attractive starting salary with company car, expenses and bonus plan. Openings in Baltimore, Philadelphia and Pittsburgh.**

**P-6903**, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

*REPLIES (Box No.): Address to office nearest you*
*NEW YORK: 330 W. 42nd St. (36)*
*CHICAGO: 520 N. Michigan Ave. (11)*
*SAN FRANCISCO: 68 Post St. (4)*

### *POSITIONS VACANT*

**Estimator, for firm doing extensive sewer,** watermain, treatment plant, heavy construction. Must be graduate engineer or have extensive engineering background, with ability to obtain price and job information. Permanent position for qualified applicant. P-6074, Engineering News-Record.

**Construction Foreman for firm engaged in** extensive sewer, water main and treatment plant facilities. Permanent position in N. Y. State area. Only qualified applicants with broad experience. P-6595, Engineering News-Record.

**Wanted: Instructor in engineering drawing** and descriptive geometry. Salary $3600 for 9 month period. Dept. of Engr. Drawing, University of North Dakota, Grand Forks, North Dakota.

**Petrographer: Experienced in mineralogical** and petrographic examination of cement, concrete and concrete aggregates. Write fully regarding experience, education, date available and salary required. Midwest location. Permanent. P-6770, Engineering News-Record.

**Application Engineer for sales office of company** manufacturing chlorination equipment of water and sewage treatment. This is a rapidly growing new division of an organization well established in the industrial instrument field. Excellent opportunity for ambitious man with sanitary engineering education and experience. Reply to P-6804, Engineering News-Record.

**Superintendent-Foreman — aggressive and** thoroughly experienced in commercial and institutional building construction. Capable of organizing and directing complete projects. Excellent opportunity with a long established firm. Location Birmingham and North Alabama. P-6809, Engineering News-Record.

**Position available instructor or assistant professor** in civil engineering in New England college. Appointee to teach mechanics, mechanics of materials, soil mechanics and surveying. P-6858, Engineering News-Record.

**Draftsman—Experienced structural steel detailer** and checker for building construction. Permanent. All employee benefits, paid vacation, insurance, etc. Submit resume and salary desired. Barber & Ross Company, 5th & V Sts., N. E. Washington, D. C.

## CIVIL ENGINEER

**With municipal experience, particularly in street, sewerage and drainage work. Should be able to qualify as Chief of Party.**

**Apply Director of Public Works**
**Wakefield, Mass.**

**HEATING & VENTILATING ENGINEER**

**Graduate Engineer experienced in all phases of paper mill heating and ventilating air conditioning and refrigeration for large expanding and progressive mill in Maryland. Under 35 years of age, good salary, all benefits and excellent opportunity for advancement. Send detailed resume of experience and education to**
**Director of Personnel**
**West Virginia Pulp & Paper Company**
**Luke, Maryland**

**SALARIED POSITIONS $5,000 — $35,000**

We offer the original personal employment service (established 45 years). Procedure of highest ethical standards is individualized to your personal requirements. Identity covered; present position protected. Ask for particulars.

**R. W. BIXBY, Inc.**
659 Brisbane Bldg. Buffalo 3, N. Y.

### *POSITIONS VACANT*

**Highway Inspectors—Thoroughly experi**enced. For bridge and structures. Grade & drain. Concrete pavement. Bituminous concrete pavement. Also highway designers & draftsmen for structures and roadway. Work on highway projects in Central part of United States. Reply should include details of education, experience and salary requirement. Each response to this will receive prompt attention and reply. P-6882, Engineering News-Record.

**Estimator, with at least four years experi**ence in the field on foundation and bridge work, who has actually prepared estimates of cost for heavy construction. Applicant should be an engineer about thirty-five years of age. Work will be in Pittsburgh office of well established contractor. P-6916. Engineering News-Record.

**Civil Engineer for local road survey, design** and construction. Prefer man with Illinois V. S. S. or Twp. M.F.T. experience. State education, experience, reference and salary expected. Hancock County Highway Dept. Carthage, Illinois.

**Sales Promotion and technical service engi**neer. Some experience in concrete and cement. Graduate preferred but experience may be substituted. Location New York. Considerable traveling N. E. States. Submit complete details, age, experience and salary expected. P-6895, Engineering News-Record.

**Exp. steel detailer for consultant's office in** Ohio. Submit experience resume to P-6897, Engineering News Record.

**Architect—Qualified through training and ex**perience to design churches, schools and other buildings. Give full information as to education, experience, salary requirements and when available. Location Eastern New York. P-6735, Engineering News-Record.

(Continued on page 88)

*If there is anything you want*
that other readers can supply
**OR . . . something you don't want—**
that other readers can use—
*Advertise it in the*
*SEARCHLIGHT SECTION*

## DETAILERS AND CHECKERS

Experienced in detailing and checking shop drawings of structural steel for buildings and bridges. College education not necessary. Paid holidays, vacation, and other usual benefits. Send complete experience record and salary requirements to:

**Pittsburgh-Des Moines Steel Company**
1015 Tuttle St. Des Moines, Iowa

## ENGINEERS — TECHNICIANS

Experienced in Concrete, Soils mechanics, Asphalt paving, Geology and Highway engineering. Also Cement and Asphalt Chemists.

LARGE INDUSTRIAL AND HIGHWAY PROJECTS

Long term employment and advancement opportunities, paid vacations, hospitalization and insurance.

Please submit complete resume of experience, education, earliest date available and salary requirements.

**TOLEDO TESTING LABORATORY**
1810 North 12th Street Toledo 2, Ohio

## STRUCTURAL

DESIGNERS - DETAILERS - DRAFTSMEN
for work on

- Bridges
- Industrial Buildings
- Expressways
- Pressure Vessels

We desire engineers who want long term employment with ample opportunity for professional development and advancement. We have an excellent Employee Benefits Plan and sponsor a Blue Cross-Blue Shield Group. Paid vacations, holidays and sick leave. St. Louis offers extensive housing, educational and cultural facilities.

*Please write fully to*

**SVERDRUP & PARCEL, INC.**
*Consulting Engineers*
915 Olive St. Louis 1, Mo.

## DESIGNERS — SOILS ENGINEER FIELD ENGINEERS

Well-established Midwest engineering firm needs the services of 2 Hwy. Bridge Designers, 2 Road Designers for important Hwy. Work, 1 Soils Engr. for Hwy. Work, 2 Field Engrs. for Suburban Work, 5 Draftsmen.

No applications desired from employees of Hwy. Depts. or Toll Rd. Coms. in Ohio, Ind., Ill., Mich. & Wis.

Fair starting salaries for permanent positions with noncontributory group life insurance and Blue Cross insurance. Bonus plan for 3-year employees, Xmas gifts under 3 years, Pension plan for 5-year employees.

40-hour week; 2 week vacation after 1 year employment.

*Write for application blank to*

**Consoer, Townsend & Associates,**
351 EAST OHIO STREET,
CHICAGO 11, ILLINOIS.

## CONSTRUCTION EQUIPMENT ENGINEERS

Graduate engineers with minimum 5 years' experience designing, selecting, specifying and/or supervising operations of construction equipment such as crawlers, rubber-tired tractors, shovels, cranes, air compressors, welding machines, pumps, mixers, spreaders, fork lifts, etc.

To consult with manufacturers and suppliers on selection and modification of the abovementioned equipment. For company's Equipment Engineering Division located in New York City. Salary good; liberal benefits.

Write giving full particulars regarding personal history and work experience. Please include telephone number.

**Recruiting Supervisor, Box 57**
**ARABIAN AMERICAN OIL COMPANY**
505 Park Avenue, New York 22, New York

### MECHANICAL ENGINEER

Graduate Mechanical Engineer experienced in the operation of Fourdrinier paper machines, refining and related equipment for large expanding and progressive mill in Middle Atlantic States. Under 35 years of age. Good salary and excellent opportunity for advancement. Give detailed resume of experience. Send resume to

Director of Personnel
West Virginia Pulp & Paper Company
Luke, Maryland

**DEPUTY BUILDING INSPECTION SUPERVISOR:** Graduation from an accredited four years college with degree in structural or architectural engineering. Seven years of experience in the structural design of buildings and some experience in examination of plans and specifications of building projects and applications for building permits. Salary $5772-$6812 per year.

**ARCHITECT I:** Graduation from a college or university of recognized standing with a degree in architecture and 2 years experience in architectural planning, design or drafting. Salary $4628-$5460 per year.

*Complete details by writing to:*

**DIRECTOR OF PERSONNEL**
Municipal Building, Hartford, Conn.

## ENGINEERS & INSPECTORS

**TOP SALARY!**
**OVERSEAS AIRBASE**
**Mild Climate!**

SOILS ENGINEER
SOILS TECHNICIAN
ASPHALT PAVING ENGINEER
ASPHALT PAVING INSPECTOR
CONCRETE INSPECTORS

Send full resume—confidential—including salary desired—to:

P-6964, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

## STRUCTURAL ENGINEERS BRIDGE DESIGNERS

Excellent opportunity for Structural Engineers experienced in design of structural steel or reinforced concrete. Recent graduates and detail draftsmen also accepted. Good living conditions with insurance, pension and bonus plans.

Send complete outline of experince, date available and salary desired in first letter to:

**GANNETT FLEMING CORDDRY & CARPENTER, INC.**
Box 366, Harrisburg, Pa.

## SEWERAGE WORKS ENGINEER

Greenwich, Conn.
**Salary range $5472-$6600**
open competitive examination
applications accepted until Aug. 1
Personnel Office—Town Hall—Greenwich, Conn.

### WANTED: ASS'T TRAFFIC ENGR.

For traffic engineering department just recently established. Salary range $537 to $620 a month with maximum salary obtainable through annual and longevity increases. Registration as a professional engineer required. Applications accepted until the needs of the service are filled.

**Write Personnel Department**
City Hall, Madison 3, Wis.

## ESTIMATOR WANTED

By Southern construction firm doing approximately $20,000,000.00 worth of work annually. Must be college graduate and have wide experience in all types of building construction. Must be capable of supervising Estimating Department and know pricing of labor and materials and be able to prepare and submit bid on any size project. Salary commensurate with ability. Must be willing to locate in South.

P6971 Engineering News Record
330 W. 42 St., New York 36, N. Y.

## CHALLENGING POSITION

Man with good engineering background to run a concrete products and ready-mix plant, must be able to show results. A challenging position with commensurate salary.

P-6954, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

### EXPERIENCED HYDRAULICS ENGINEER WANTED

Graduate engineer experienced in paper mill hydraulics, planning and development of piping layout systems, etc. for large expanding and progressive mill in Maryland. Good salary, all benefits and excellent opportunity for advancement. Send detailed resume of experience and education to

Director of Personnel
West Virginia Pulp & Paper Company
Luke, Maryland

## POSITIONS VACANT
(Continued from page 86)

**Engineers—Experienced in design and pre**-preparation of plans for water works and sewerage systems and structural design. Advise education, experience, salary requirements and when available. Location Eastern New York. Reply P-6736, Engineering News-Record.

**Engineer—Experienced in bridge and general** marine construction. Salary open. Address reply to P. O. Box 647, Savannah, Georgia.

**Project Superintendent — Experienced in** bridge and general marine construction. Salary open. Address reply to P. O. Box 647, Savannah, Georgia.

**Help Wanted—Male structural steel detailers** experienced, first class, permanent position—excellent opportunity—Box 955, New Haven, Conn.

**Help Wanted—Male experienced graduate en**gineer for structural steel take-off and estimating—Box 955, New Haven, Conn. Will also consider application of recent graduate.

## EMPLOYMENT SERVICE

**Salaried personnel, $3,000-$25,000. This con**fidential service, established 1929, is geared to needs of high grade men who seek a change of connection under conditions assuring, if employed, full protection to present position. Send name and address only for details. Personal consultation invited. Jira Thayer Jennings, Dept. L, 241 Orange St., New Haven, Conn.

## POSITIONS WANTED

**Supt. extensive experience on rock heavy** blasting, open cuts shafts tunnels and earth moving. PW-6782, Engineering News-Record.

**Construction Superintendent, or project man**ager. 25 years experience as a construction superintendent and project manager in heavy industrial construction. Especially experienced in oil refinery and chemical plant construction, as well as steel mill building, and government construction. Best references from previous employers, with excellent record of accomplishment. Available immediately. Reply to PW-6726, Engineering News-Record.

**Construction Engineer—Reg. Prof. Engr. C.E.** grad. 20 years construction experience 12 of which as supt. of construction. Know equipment, estimating, job pushing, cost control. Experience about 70% heavy 30% industrial. Age 41. PW-6737, Engineering News-Record.

**Retired engineer, technologist, seeks lines, as** manufacturers agent, builders, architects. PW-6847, Engineering News-Record.

**General Foreman or construction foreman. 20** years experience in heavy construction subways, tunnels, road & bridge work. Sewers utilities, foundations. PW-6774, Engineering News-Record.

**Field Accountant "No Middleman" experi**enced in running complete field office. Will relocate. PW-6874, Engineering News-Record.

**Superintendent-Project Manager. Lic. Prof.** Engr. N. Y. Qualified journeyman in carpentry & reinforcement. Background of 67 bridges, arch, & I-beams; commercial bldgs., laboratories etc. Special training in take-off, cost analysis & bidding. Now available. PW-6917, Engineering News-Record.

**Shovel and dragline operator 20 yrs. experi**ence operating all makes on all types of construction. 8 yrs. on 80D Northwest. Highly mechanical inclined. Desire job as supervisor or full time operating. Will go any place. PW-6908, Engineering News-Record.

**General Superintendent, C.E. and Surveyor,** 43, German graduate. English, Spanish, French, German perfectly. 20 years experience in heavy construction (highways, railroads, bridges, sanitation, etc.) with contractors, consultants, R.R. Co., on 3 continents, 4 yrs. Canada and USA. Field: supervision, operation, surveying. Office: management, estimates, bids, buying, costs, subcontractors. Will travel, also foreign. Available July 15. Box 1051, Oak Park, Ill.

## POSITIONS WANTED

**Top flight tunnel supt 26 yrs experience in** all types of ground. 11 yrs with present employer have supervised some of world's largest and most difficult underground projects, recently completed 18 mile tunnel in foreign country. At present finishing a 5 mile water tunnel, capable start to finish, have 1st class following. Understand men, machinery and cost. Resume sent on request. I can get progress, salary straight or percentage. PW-6860, Engineering News-Record.

**Sanitary Engineer 56 M.I.T. graduate top ex**perience design, construction operation water supply, sewers, sewage treatment. Three jobs—30 years. Presently employed as executive. Available. 30 days. PW-6859, Engineering News-Record.

**Heavy Construction Manager. Thoroughly** qualified in field, and office 26 years experience hydro, and steam plants, dams, tunnels and airbases. Construction wide, and cost-conscious now employed. Have had foreign experience. PW-6920, Engineering News-Record.

**Graduate Civil Engineer 26; married employed** two years by Illinois Highway on construction of highways and bridges. Desire to join contractor doing mainly bridge work. PW-6976, Engineering News-Record.

## POSITIONS WANTED

**B.C.E., 5 years with consulting firm, sewers,** water, drainage, surveys, subdivision and light construction; design, specifications, reports; Eastern states preferred. PW-6942, Engineering News-Record.

**Construction or Project Supt: Resident of cen**tral New Jersey: desires position with progressive organization handling large volume of work, have 30 years of proven experience of full responsibility on construction of industrial & commercial bldgs; hospitals; schools, housing projects and sewage treatment plants. Will travel if necessary. Registered engineer. PW-6967, Engineering News-Record.

## PART TIME WORK WANTED

**Part Time work. Retired licensed structural** engineer available for design, detailing and estimating. PTWW-6788, Engineering News-Record.

**Licensed professional engineer available for** design, detailing, estimating and inspection. PTWW-6960, Engineering News-Record.

# SEARCHLIGHT SECTION

BUSINESS OPPORTUNITIES — EQUIPMENT, USED OR SURPLUS NEW.

(Continued on pages 89-91)

*REPLIES (Box No.): Address to office nearest you*
*NEW YORK: 330 W. 42nd St. (36)*
*CHICAGO: 520 N. Michigan Ave. (11)*
*SAN FRANCISCO: 68 Post St. (4)*

## SPECIAL SERVICE

**Architect and Engineer firm located in Okla**homa would like to subcontract design and drafting work. The firm has personnel licensed and experienced in the following; architecture, civil, structural, mechanical and electrical. Shall consider and answer all offers. SS-6951, Engineering News-Record.

## BUSINESS OPPORTUNITIES

**For Sale: Very active, fully equipped, survey**ing practice and architectural service, Southern Nassau County. Principals only. BO-6723, Engineering News-Record.

**For Sale construction co. in central U. S. A.** with supervision and new equipment to handle approx. $3,500,000 of work each year. Reason bad health. BO-6764, Engineering News-Record.

**Wanted to buy surveying and mapping busi**ness. BO-6792, Engineering News-Record, 520 N. Michigan Avenue, Chicago 11, Illinois.


**LEARN ESTIMATING**
**Complete Building Estimators Course, also Building Labor Calculator for practicing estimators. Thirty-fourth year serving the building industry. For free trial and all particulars write:**
**TAMBLYN SYSTEM**
**1420 Gilpin St. Denver 6, Colorado**

**Engineers—Foremen—Office Men**
**Learn latest methods to organize and run work. Prepare for the top jobs.**
*Send post card for details.*
**GEO. E. DEATHERAGE & SON**
**CONSTRUCTION CONSULTANTS**
**411 So. 5th Ave. Lake Worth, Florida**

STRUCTURAL ENGINEERING
ARCHITECTURAL ENGINEERING
OUR COURSES of instruction by mail HAVE HELPED THOUSANDS to Better positions and to pass State Board Examinations. Forty-third year
**WILSON** *Engineering Corp.*
College House Offices HARVARD SQ. CAMBRIDGE MASS.

**FOR SALE**
1—Bay City Model 65 (1 Yard) Crawler Shovel Crane Serial No. 5037. Cummings—H-6 Diesel power. Equipped with two shovel fronts and 70-foot boom. Excellent condition. **Price $19,000.00**
1—P & H. Model 855 Crawler Shovel Crane. Serial No. 10984. Powered by GM 671 Diesel. Equipped with shovel front and 90-foot boom. Excellent condition. **Price $31,000.00**
1—Lorain Model 820 Crawler Crane. Serial No. 18221. Powered by Caterpillar D 13000 Engine and 90-foot boom. Excellent condition. **Price $29,000.00**
*The above equipment is available and ready to work immediately.*
**E. & E. J. PFOTZER, Inc.**
**P. O. Box 126 Wilmington, Delaware**

**PASTURE SOD FOR SALE**
**We have a considerable acreage of good clean pasture sod for sale by the acre; to be cut and removed by the purchaser.**
**Prices available on request.**
*Inspection invited.*
**FORSGATE FARMS, INC.**
**Jamesburg, New Jersey**
**Telephone—Jamesburg 1-0150**

**FOR SALE**
1—Alamo Rotary Bender—Serial #MB888 w/Wisconsin VE-4 Engine
1—Doelger & Kirsten #1670 Shear
Purchased new 1949 and used only on one job.
FS-6455 Eng. News-Record
330 W. 42 St. New York 36, N. Y.

**Lorain 820**
**CRANE OR DRAGLINE**
**S/N 17646 Cat. 13000 Price $20,000**
**SP-414 Moto-Crane.**
**A. C. R. CO.**
**19615 Nottingham Rd., Cleveland 10, Ohio**

***Wanted Immediately:***
**1—50 ton Stiff Leg Derrick W/Hoist. Engine must be in good working condition.**
**W. J. Halloran Steel Erection Co.**
**303 Chapman Street**
**Providence, Rhode Island**

# CLASSIFIED SEARCHLIGHT SECTION ADVERTISING

BUSINESS OPPORTUNITIES — EQUIPMENT - USED or RESALE

**UNDISPLAYED RATE:**

$1.80 a line, minimum 3 lines. To figure advance payment count 5 average words as a line.

PROPOSALS $1.80 a line an insertion.

BOX NUMBERS count as one line additional in undisplayed ads.

DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

**DISPLAYED RATE:**

The advertising rate is $20.50 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page.

EQUIPMENT WANTED or FOR SALE ADVERTISEMENTS acceptable only in Displayed Style.

*Send NEW ADVERTISEMENTS to N. Y. Office, 330 W. 42nd St., N. Y., 36, N. Y. for July 21st issue closing July 11th*

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**FOR SALE**

## ELECTRIC HOIST
## 6 TON
## YALE CABLE KING

220 Volt 3 Phase 60 Cycle Power travel. Has cable reel & weatherproof pushbutton control unit. 35' lift.

**NEVER USED**

STILL IN ORIGINAL CRATE
SELL FOR 75% OF NEW PRICE

**MADISON CONSTR. CO.**
PHONE 499 EDWARDSVILLE, ILL.

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## this Searchlight Section of E-N-R

is an index of reliable sources for Used and Resale Construction Materials and Surplus Equipment now available. Consult the **Searchlight Section** in following issues for later offerings.

If you don't see what you want—ask for it. Ask the advertisers. They are constantly adding to their stocks and may have acquired just what you need.

And, when you have special items to dispose of, use the Searchlight Section of Engineering News-Record to help you locate buyers. . . . Send a list of your equipment and we will gladly give full information as to space and rates.

*Classified Advertising Division*

**ENGINEERING NEWS-RECORD**
330 West 42nd St. • New York 36, N. Y.

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**FOR SALE**

## SEVEN (7) INTERNATIONAL TD-24's

All with P.C.U.'s—three (3) with Bulldozers, good operating condition, located Bay City, Texas.

*Contact* JAMES NOEL, Bay City
or
FRANTZ TRACTOR CO., Inc.
2740 Ewen Street, New York 63, New York

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**FOR RENT OR SALE**
**2- Size S-8 McKiernan-Terry**
## STEAM PILE HAMMERS

CONTRACTORS MACHINERY CO.
2645 Southwest Blvd., Kansas City 8, Mo.
*Valentine 4740*

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## M7 MIXERMOBILE SN 7554

New 1952. Used 600 hrs. 55 ft. tower, 60 ft. chute. Darex meter. Machine like new. Price $14,500.00. Will rent to responsible parties.

CONTRACTORS MACHINERY COMPANY
P. O. Box 6128, Harlandale Station
San Antonio, Texas
Phone: WAlnut 3-4528

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**FOR SALE**
## COMPLETE PILE DRIVING OUTFIT

10 B 3 McKiernan-Terry Hammer
100 H.P. Vertical Boiler Coal fired, New 1954, Excellent Condition
80 ft. Sectional Leads 40 ft., 20 ft., and two 10-ft. sections All Steel
100 ft. 2" Steam Hose

**Price: $6,430.00**

**CHAPIN & CHAPIN, INC.**
U. S. 20 EAST NORWALK, OHIO
*Telephone: 2-4451*

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***FOR SALE***
**One Page Dragline**

Model 618, with 120 foot Boom, 5 cubic yard Bucket. Located at Old Hickory, Tennessee, accessable by rail or water.

**Contact**
H. N. Rodgers & Sons Co.,
62 South Front Street, Memphis, Tenn.

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## DEPENDABLE USED MACHINES

**Special:—Model 503 Koehring 1¼ yd. crane with Caterpillar Diesel motor & 80' boom. Come see it!**

| | | |
|---|---|---|
| Unit ¾ yd. dragline | Agricat with angledozer blade | Mesabi 5x12 screen |
| Bay City ¾ yd. dragline | Jeep trencher with bulldozer | 30x18 roll crusher |
| Speeder ½ yd. dragline | Lorain ¾ yd. dragline; 30' shoes | 45 ton port. bin |
| Gradall excavator | Universal 880 Diesel gravel plant | Galion grader |
| Northwest truck crane | Pioneer port. 40x22 roll crusher plant | 3 yd. Dumpcrete |

For rent,—Cranes, truck cranes, buckets, frost bails, floats & other accessories.

**10002 Southwest Highway — Tractor & Equipment Company — Oak Lawn, Ill.**

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## SHOVELS - DRAGLINES
## ROTARY DRILLS

190-B Bucyrus Erie 8 yard electric shovel. Like new.

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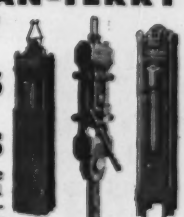

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# EDITORIALS

## Bidding System Undermined

IT MAY BE TOO EARLY to appraise fully the significance of methods adopted by the Power Authority of the State of New York and the Hydro-Electric Power Commission of Ontario in awarding contracts for the big international powerhouse on the St. Lawrence River; but at this moment the two public agencies appear to have taken steps that tend to undermine the long-established system of asking contractors to submit sealed bids on public work. Further, the contractors who accepted the contracts under the unusual conditions adopted by the two agencies must share in responsibility for having set a bad precedent, if the construction industry, on more mature consideration, concludes that the unusual steps taken by the two agencies are to be condemned.

The calls for bids were made separately by the two agencies and were normal. The New York Power Authority received six bids, with a low of $36.2 million (ENR May 19, p. 27). Soon after the bids had been opened, the Power Authority announced the award of the contract to the second low bidder, but not at its bid price. The contract price was $35.8 million, or $1.6 million below the firm's initial bid at the bid opening. It was arrived at by cutting all but 13 of 220 unit prices bid (ENR June 30, p. 70).

When the Ontario Hydro opened bids on its half of the powerhouse it had five bidders, with a low of $18.9 million (ENR June 30, p. 26). But here again, the contract did not go to the low bidder. It went to the third-low, and not at his original bid of $23.4 million but at a negotiated contract for $21.9 million, or about three million more than the low bid.

The similarity of the steps taken by the two agencies appears to have been a pure coincidence.

To state the principal objection to this method of awarding contracts for public work bluntly, it smacks of bid shopping. The New York Power Authority can claim that it saved money on this job by its unusual action. But what about future work it may wish to do by contract? If, in the future, contractors can expect it to use their publicly opened bids only as the basis for negotiating a contract with one or more of the bidders, some contractors will not bid, and those who do bid can be expected to put in bids that can be cut sharply during the post-bidding negotiations and still make a profit.

And, obviously, the method used by the Power Authority in this instance throws the door wide open to award of a contract to the bidder with the best political connections. There is no reason to believe that such a thing happened in this instance, but the precedent the Power Authority has set for less high-minded public agencies cannot be overlooked.

These are the disturbing aspects of the awards of contracts for the St. Lawrence River powerhouses. Each needs serious consideration by the construction industry. If that consideration indicates that concerted action is needed to check a dangerous trend, the time to act will be soon, before more precedents are set.

## Where Boldness Should Pay Off

THE ENGINEERING FIRMS that are standing fast in the current efforts of the International Union of Operating Engineers (AFL) to include within its ranks inspectors and technicians on soil testing and soil compaction work in California (ENR, June 23, p. 80) are to be commended. Their boldness may save them and the contractors on jobs on which they are engaged from labor trouble in the near future. But more importantly, they are doing all they can to make certain that their employes are not to be compelled to join a union that they have not selected as their representative.

The basic issue is whether our national labor policy, designed to protect "the exercise by workers of full freedom of association, self-organization, and designation of representatives of their own choosing" shall prevail.

There is little evidence to show that the employes here concerned have sought to be represented by the operating engineers union. No elections have been requested to determine who should represent them. The AFL organizers appear, instead, to be working from the top down, pressing the engineering firms to sign contracts that may or may not be of the employes' "own choosing." The fact that many of the employes in question have already joined another union—an affiliate of Engineers and Scientists of America—itself indicates that the contract proposed by the equipment-operators' union is not one of the employes' own choice.

So far, the California engineering firms involved have refused to sign up, maintaining that no contract should be negotiated unless and until the union has been certified as the employes' representative. To do otherwise would jeopardize the fundamental rights of the employes. Capitulation without an election would make it difficult, if not impossible, for many of the employes to right the wrong because of the limitations the NLRB has placed on the exercise of its jurisdiction. California law appears to offer no satisfactory redress.

All of which may point to the need of an advisory service, set up possibly by Engineers Joint Council, to guide both employers and employes when faced with intricate labor problems of this kind. Such a service might suggest, for example, the formation of an association by the affected employers in order to meet the jurisdictional standards of the NLRB, or the amendment of state laws to protect the rights and to clarify the liabilities of both labor and management.

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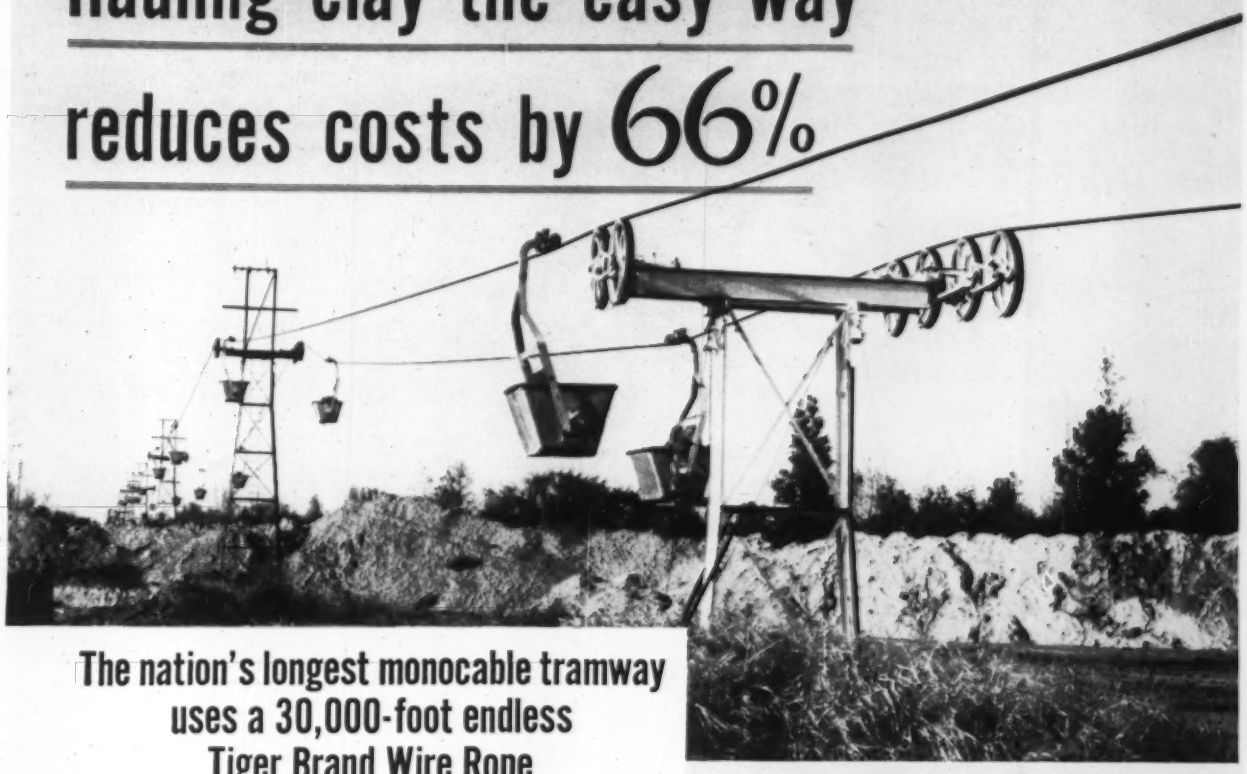

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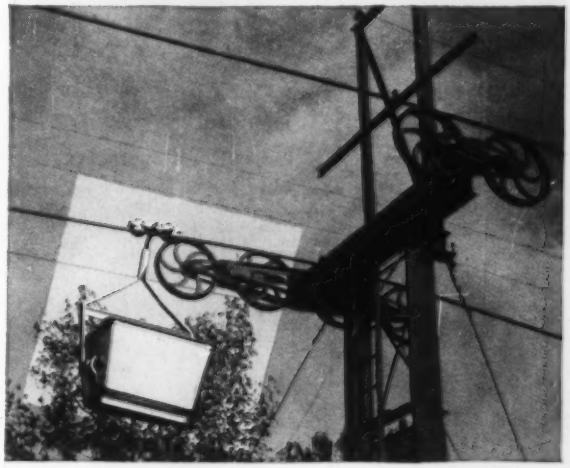
If you have rope haulage problems, get in touch with any of our offices.

**This Tiger Brand** Wire Rope Tramway hauls 180 tons of clay per hour over difficult swampy land. Buckets travel 500 feet per minute.

**Close-up** of tower showing how buckets ride the 30,000-foot continuous rope.



The Right Wire Rope will do the trick!

AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL, GENERAL OFFICES: CLEVELAND, OHIO
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**USS AMERICAN TIGER BRAND WIRE ROPE**

*Excellay Preformed*

USS

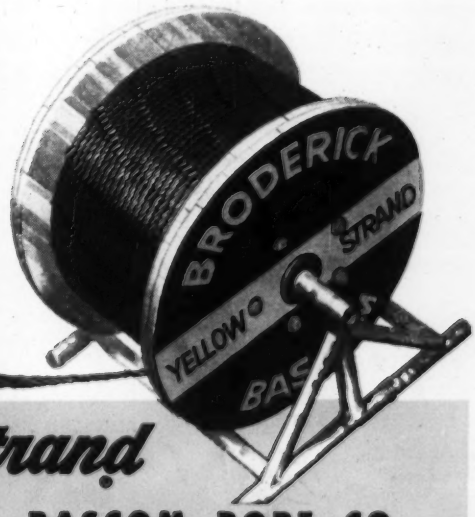
UNITED STATES STEEL

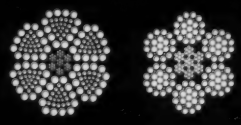
MORE SERVICE — LONGER LIFE

YELLOW STRAND

# FLATTENED STRAND WIRE ROPE

If you have a problem spot for wire rope, where sheaves, drums or the rope itself is wearing too fast, solve it with Yellow Strand Flattened Strand! Yellow Strand Flattened Strand is formed of strands laid up in a triangular form to obtain a smoother outer surface. You get 10% greater metallic area, a corresponding increase in strength, plus a compactness unobtainable in round strand construction. It is not uncommon to get twice the service—and even more! This means you also save much of the time lost in frequent rope changes. Call your Broderick & Bascom distributor today or write us direct.



**Compare Yellow Strand Flattened Strand** with ordinary (at right) wire rope. In Flattened Strand you have twelve contact points, greater bearing area, smoother surface, less wear. Result: longer service, lower final cost!

*Yellow Strand*

**BRODERICK & BASCOM ROPE CO.**

4203 UNION BLVD. • ST. LOUIS 15, MO.

*Manufacturers of Wire Rope for 79 Years*

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